

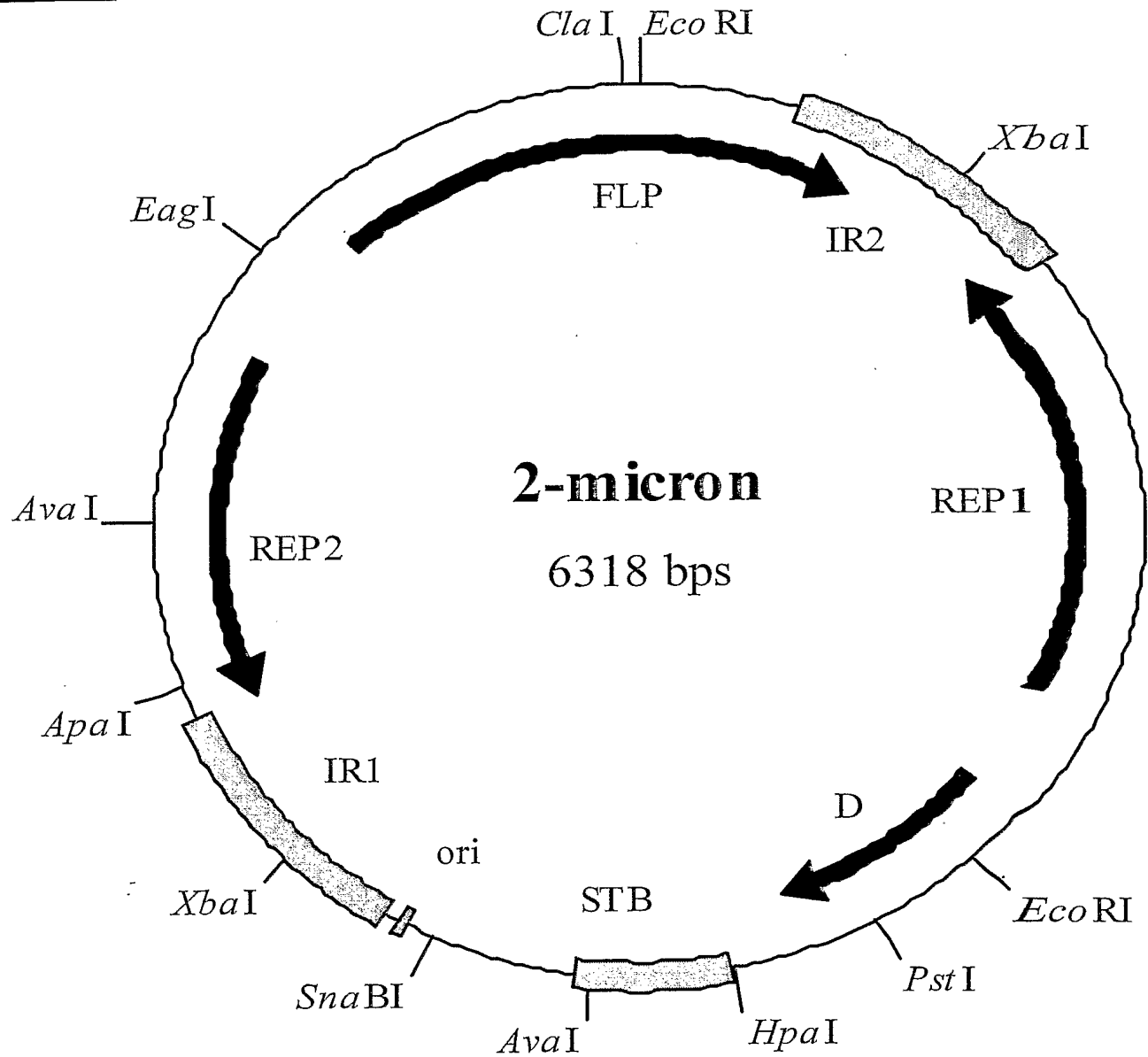
Figure 1

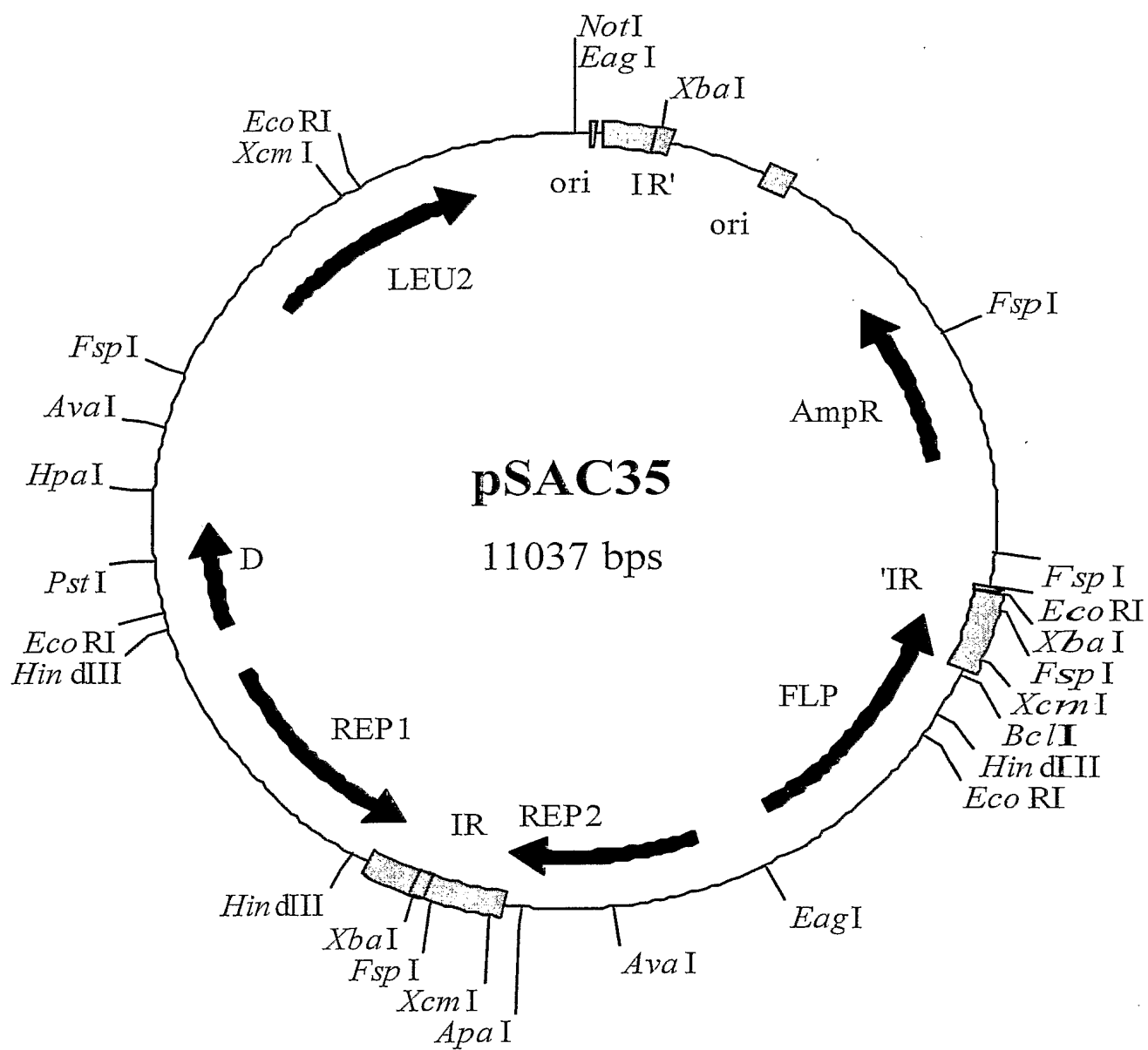
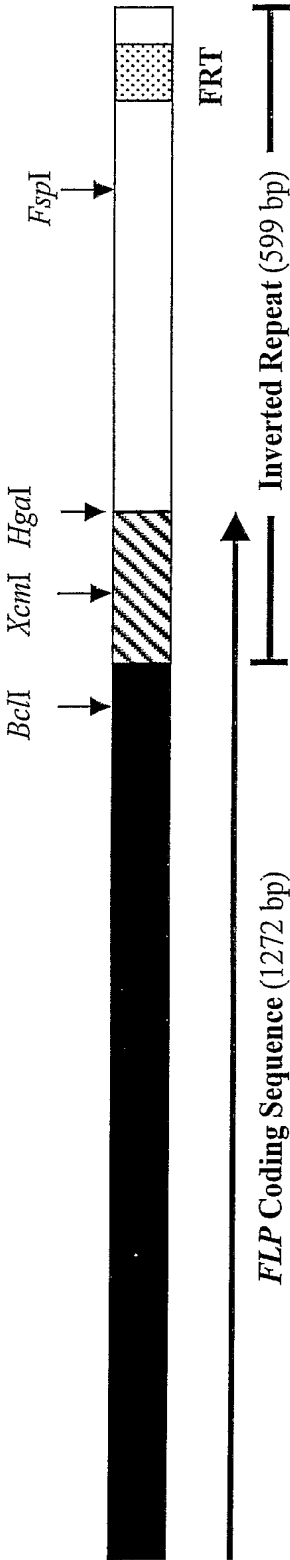
Figure 2

Figure 3

A) Restriction Endonuclease Sites used for DNA Insertions in *FLP* and the *FLP* Inverted Repeat



B) Flp Protein (423 amino acid residues)



C) Truncated FLP Protein Products

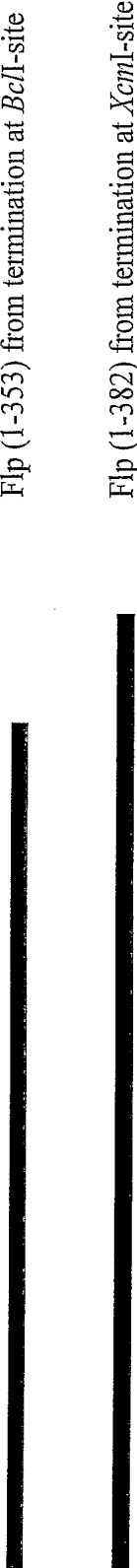


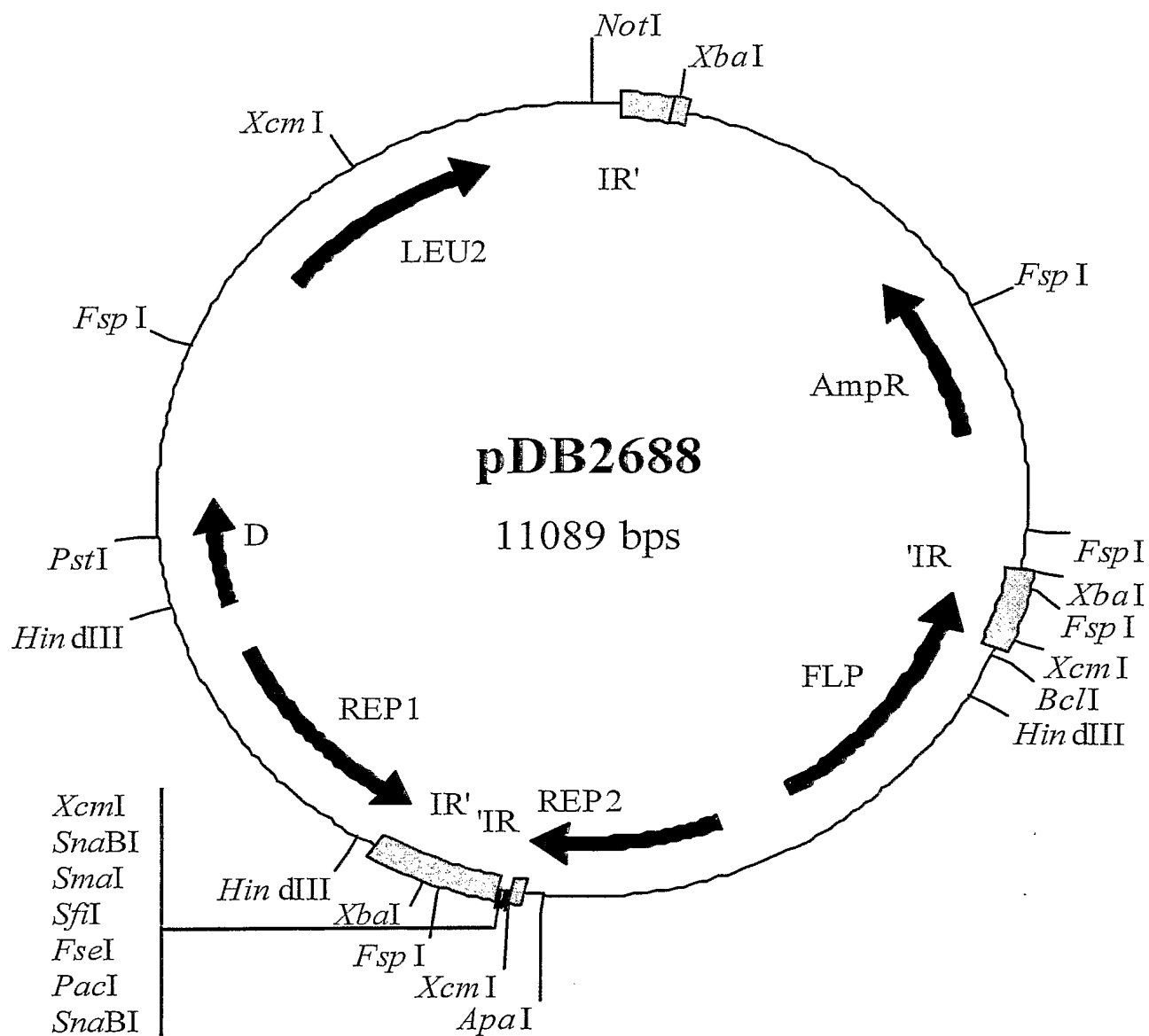
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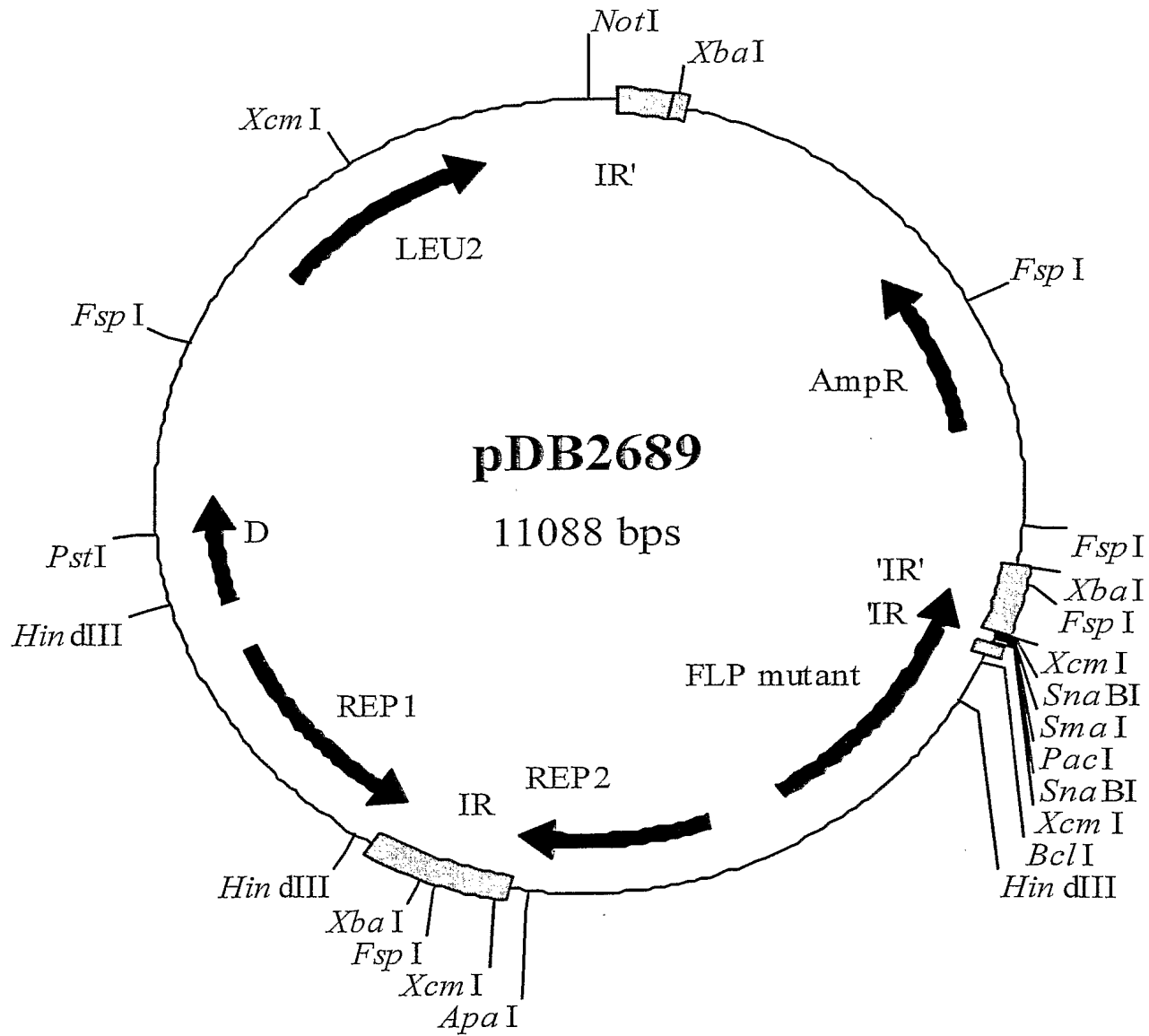
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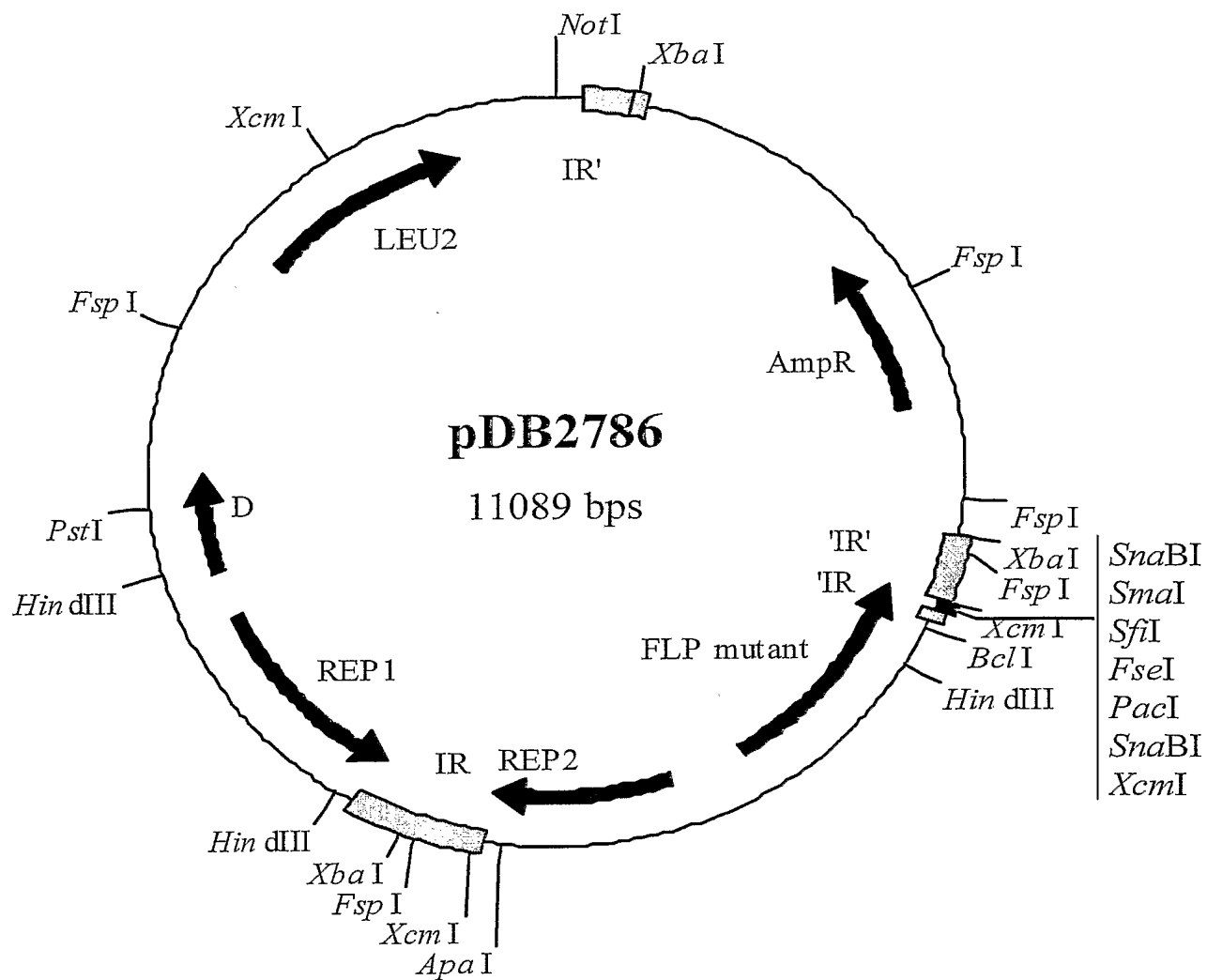
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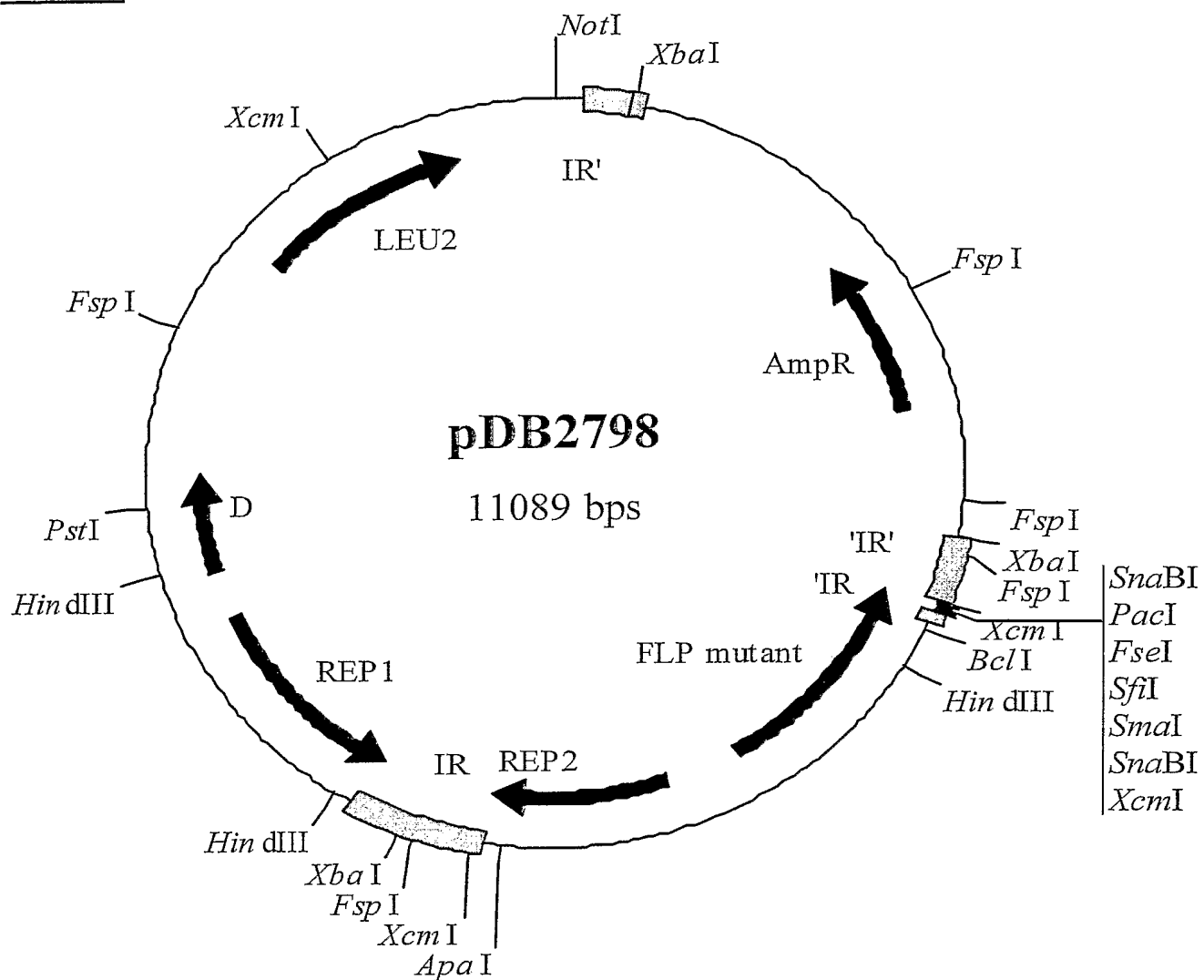
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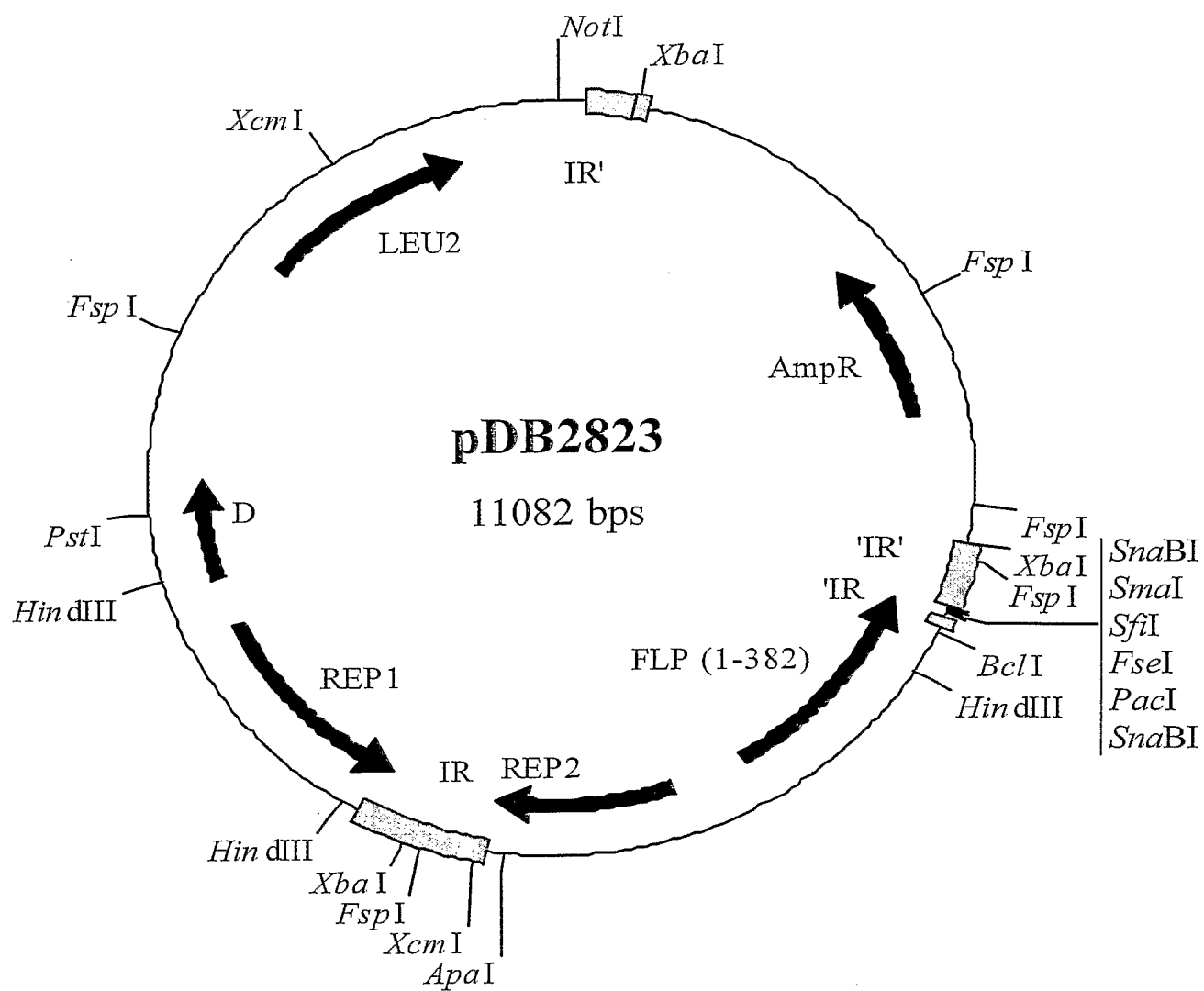
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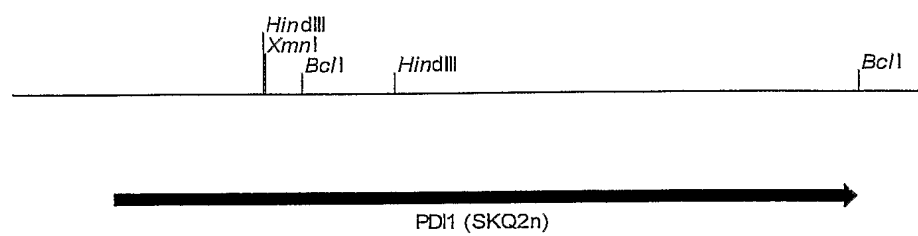
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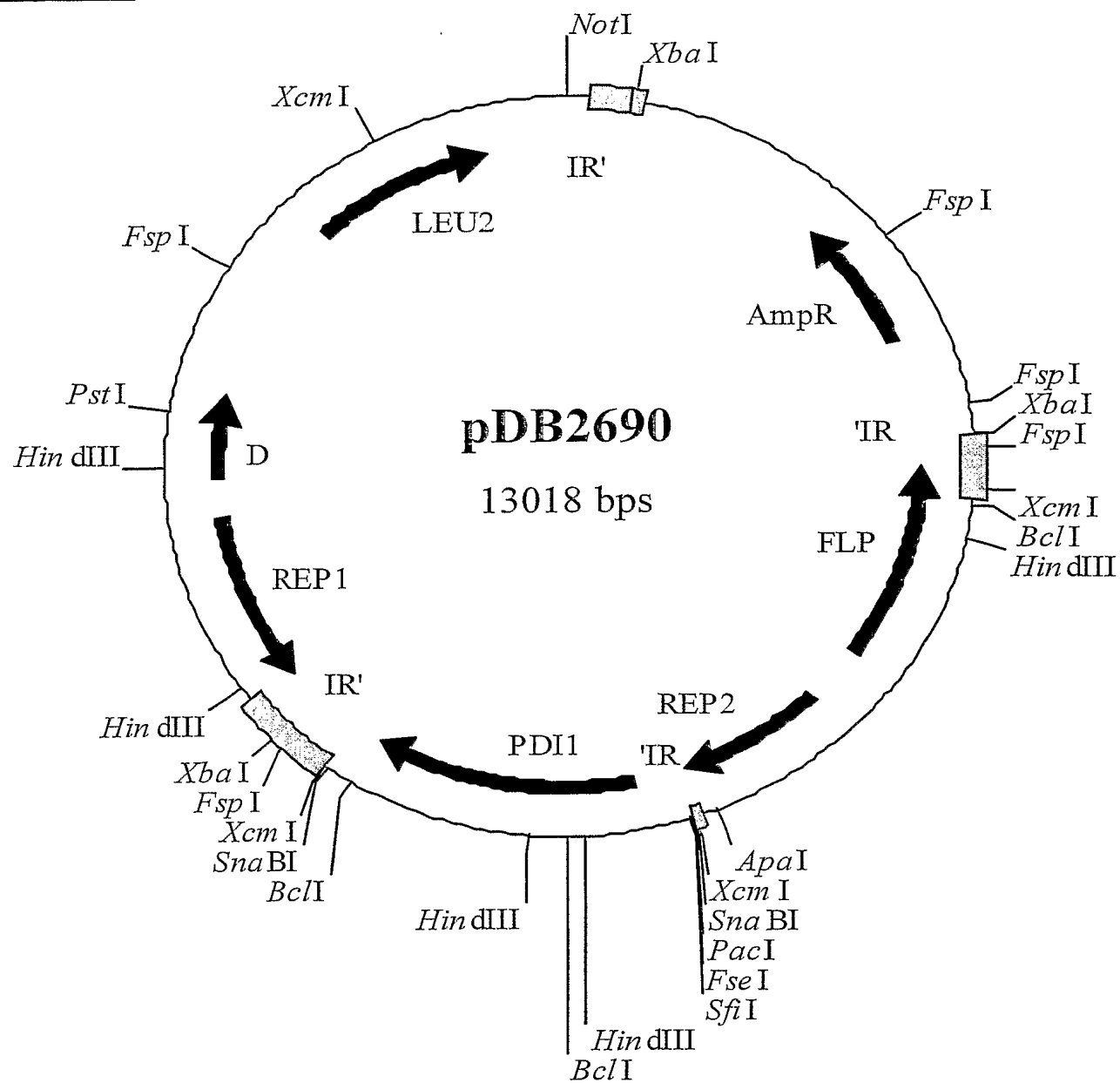
Figure 10

Figure 11

mFL = modified HSA(pre)/MF α 1(pro) fusion leader sequence

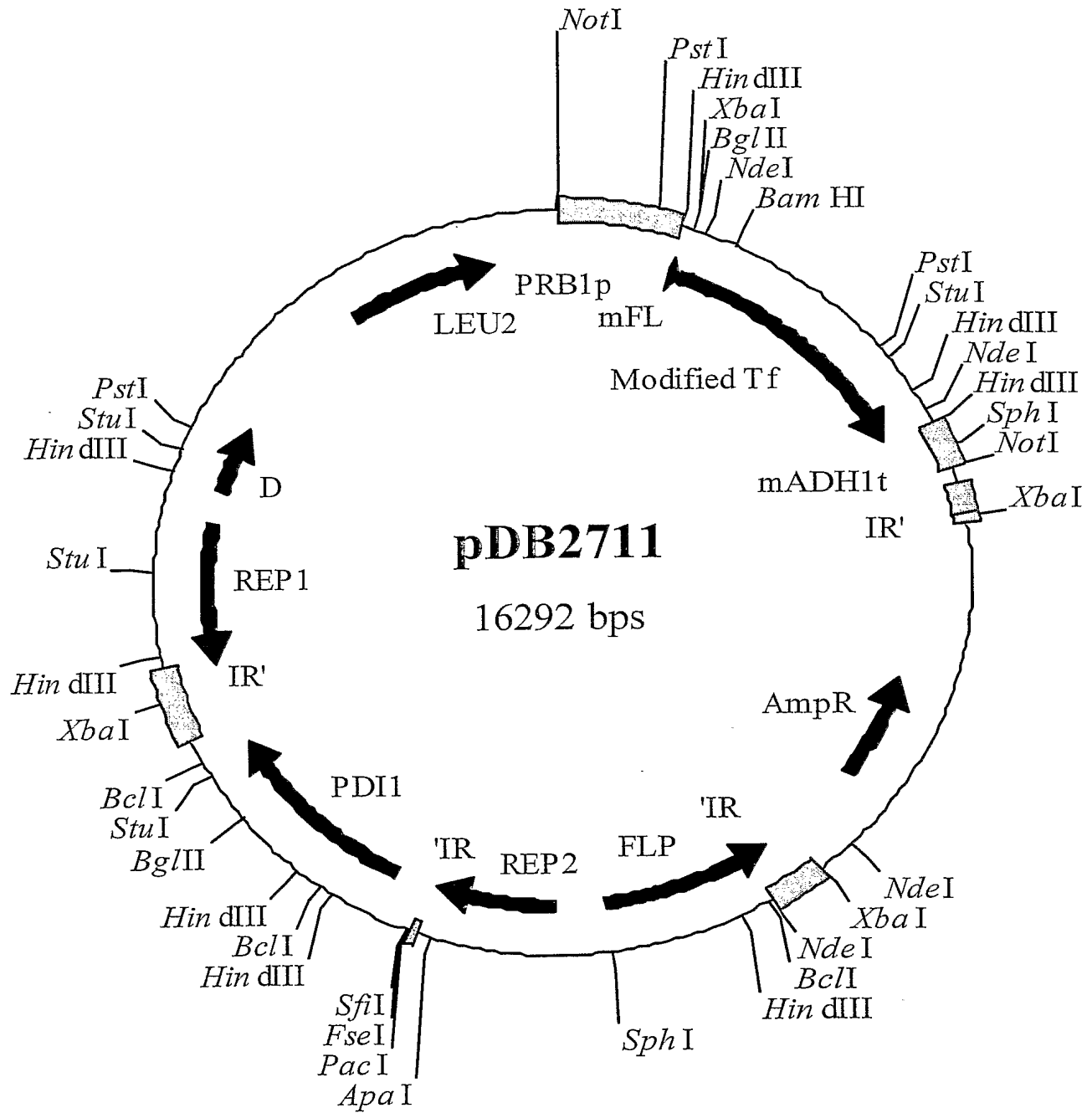
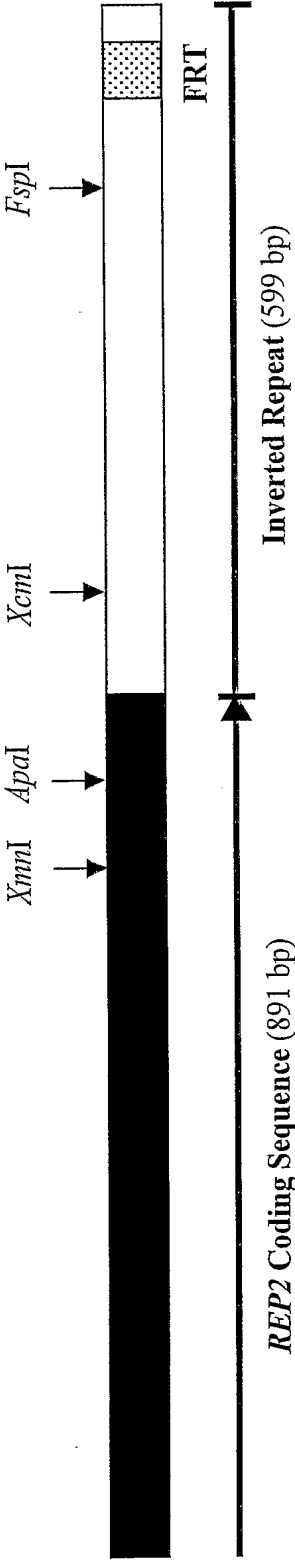
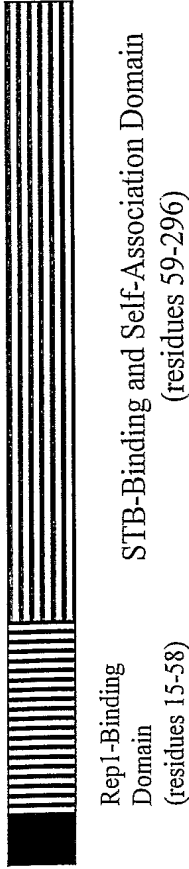


Figure 12

A) Restriction Endonuclease Sites used for DNA Insertions in *REP2* and the *REP2* Inverted Repeat



B) Rep2 Protein (296 amino acid residues)



C) Truncated Rep2 Protein Products

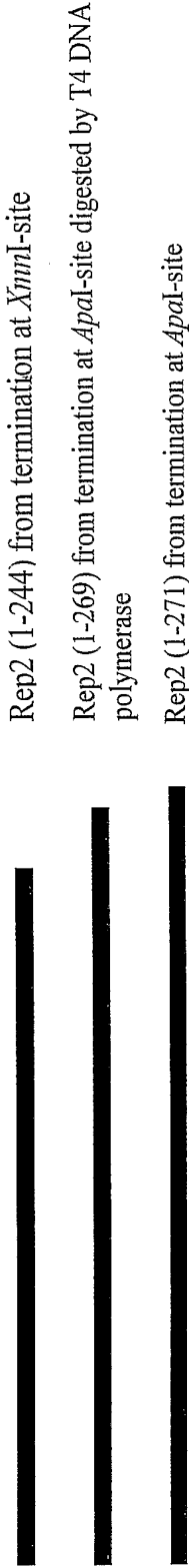


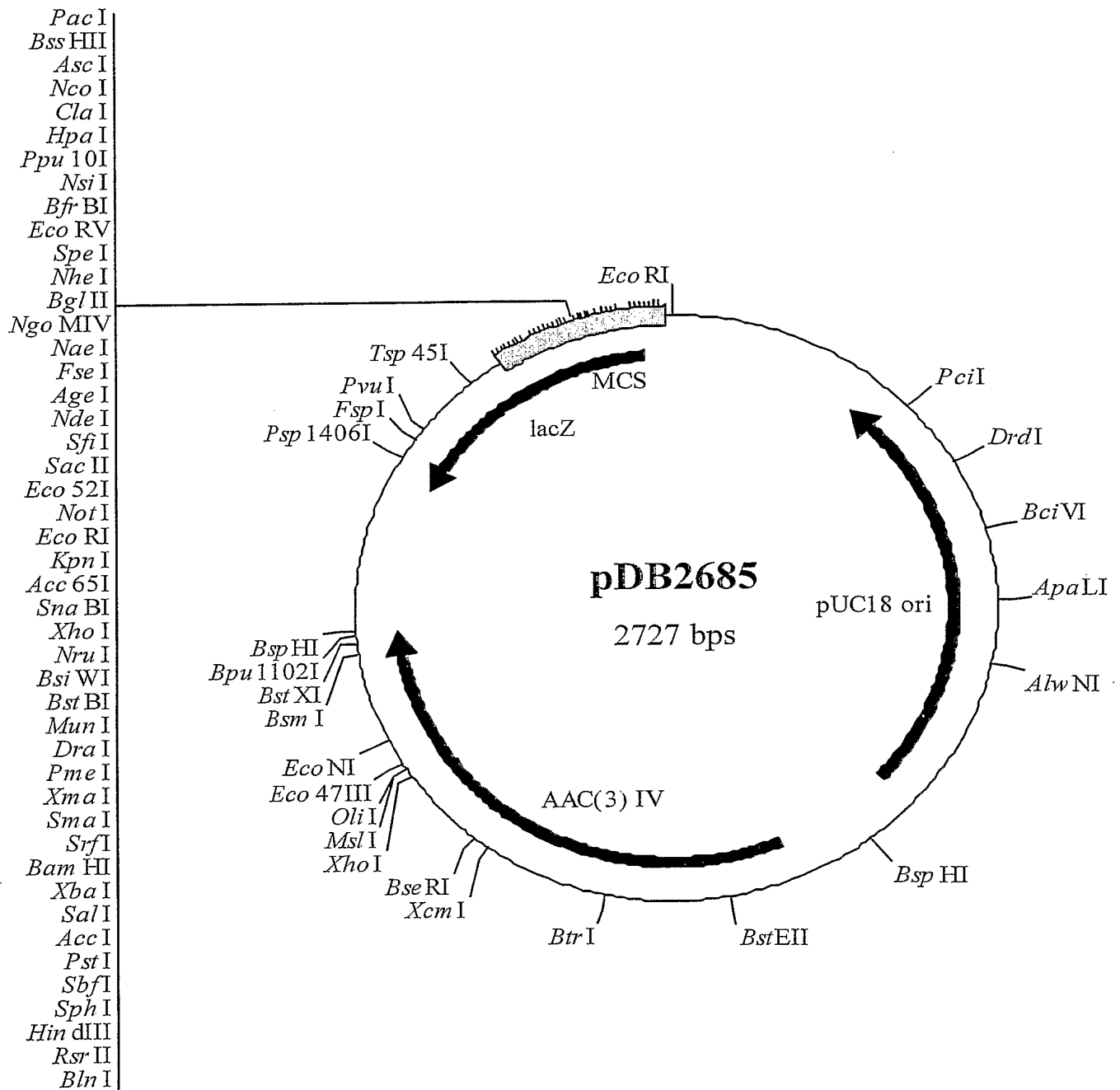
Figure 13

Figure 14

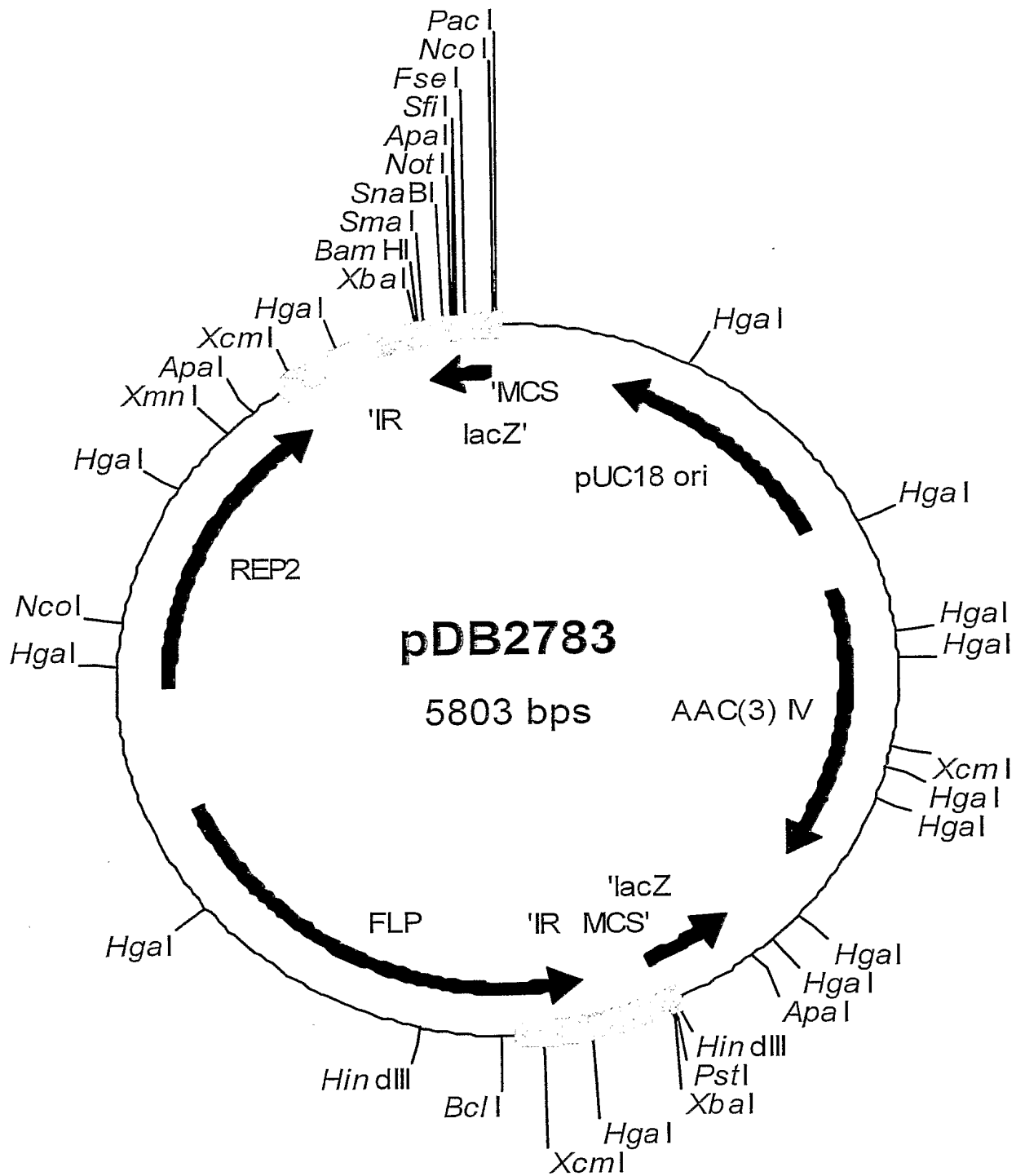


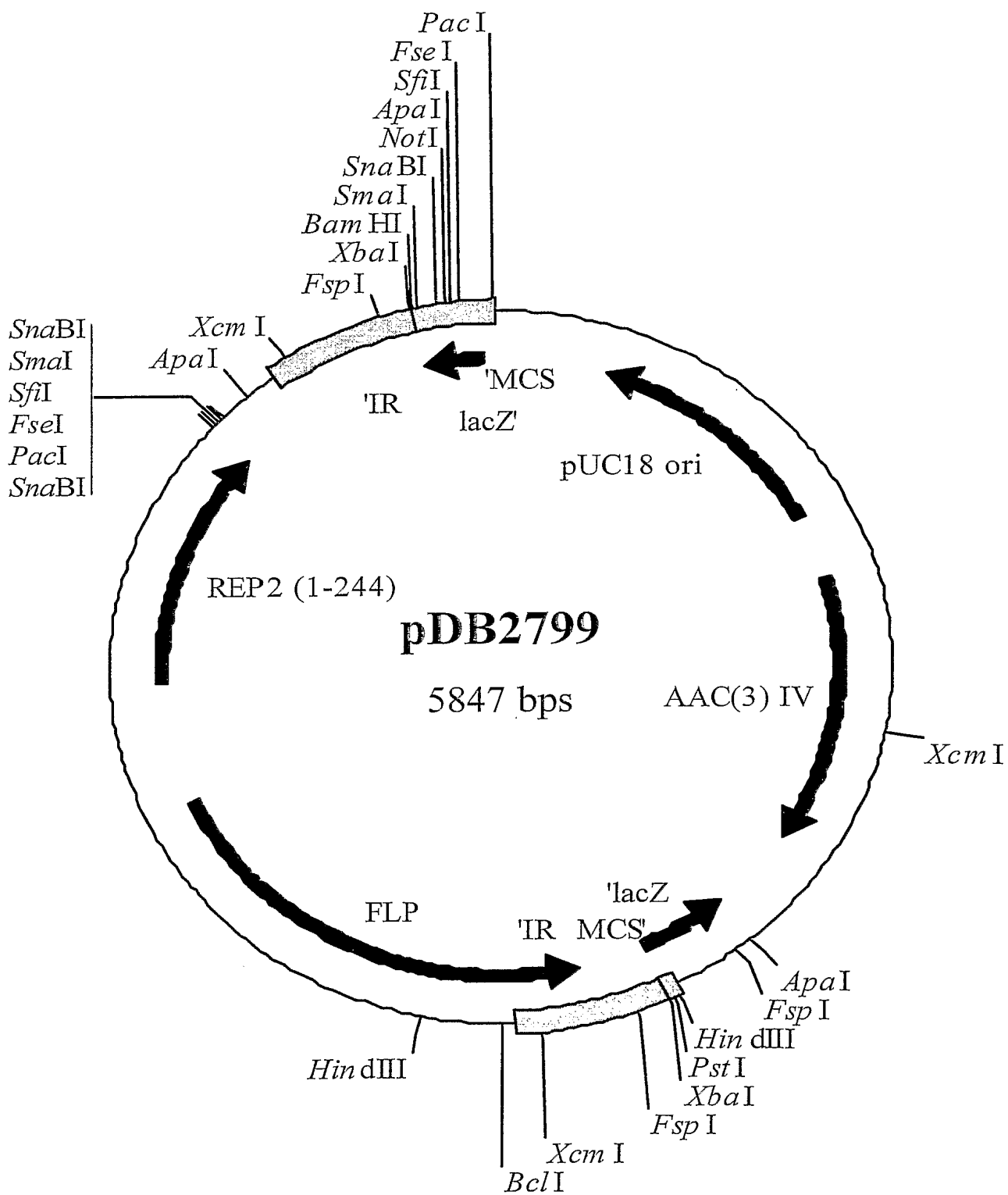
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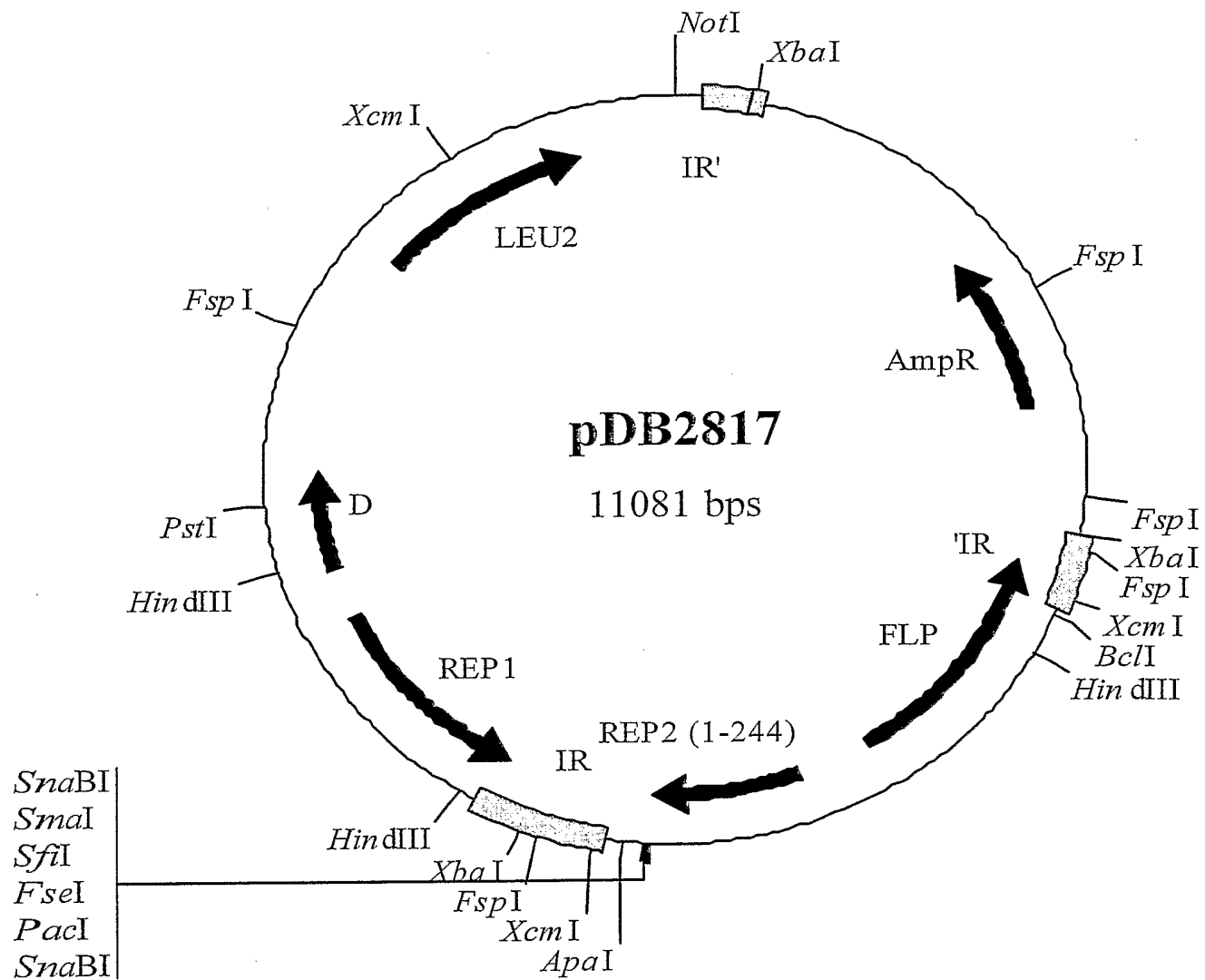
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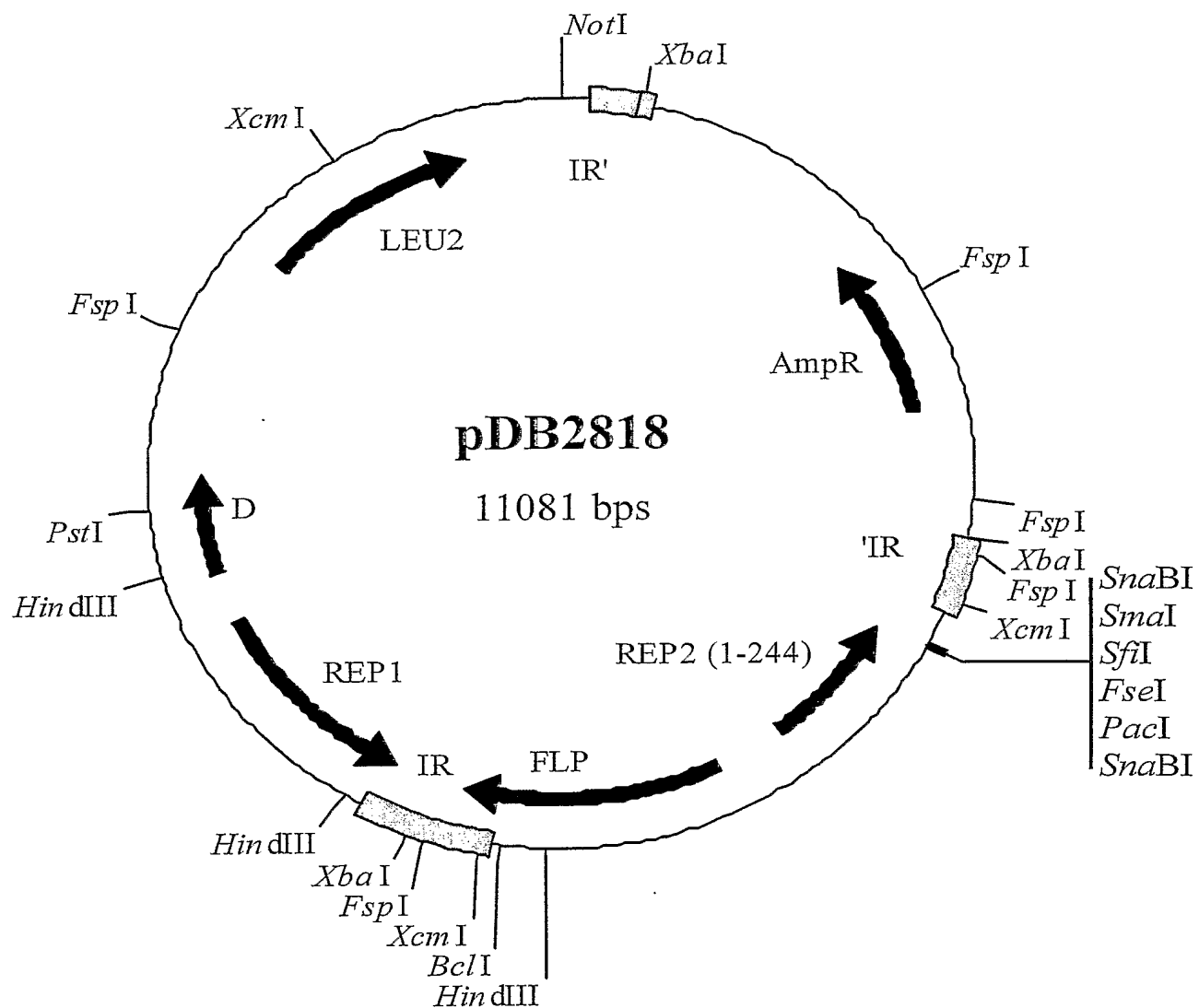
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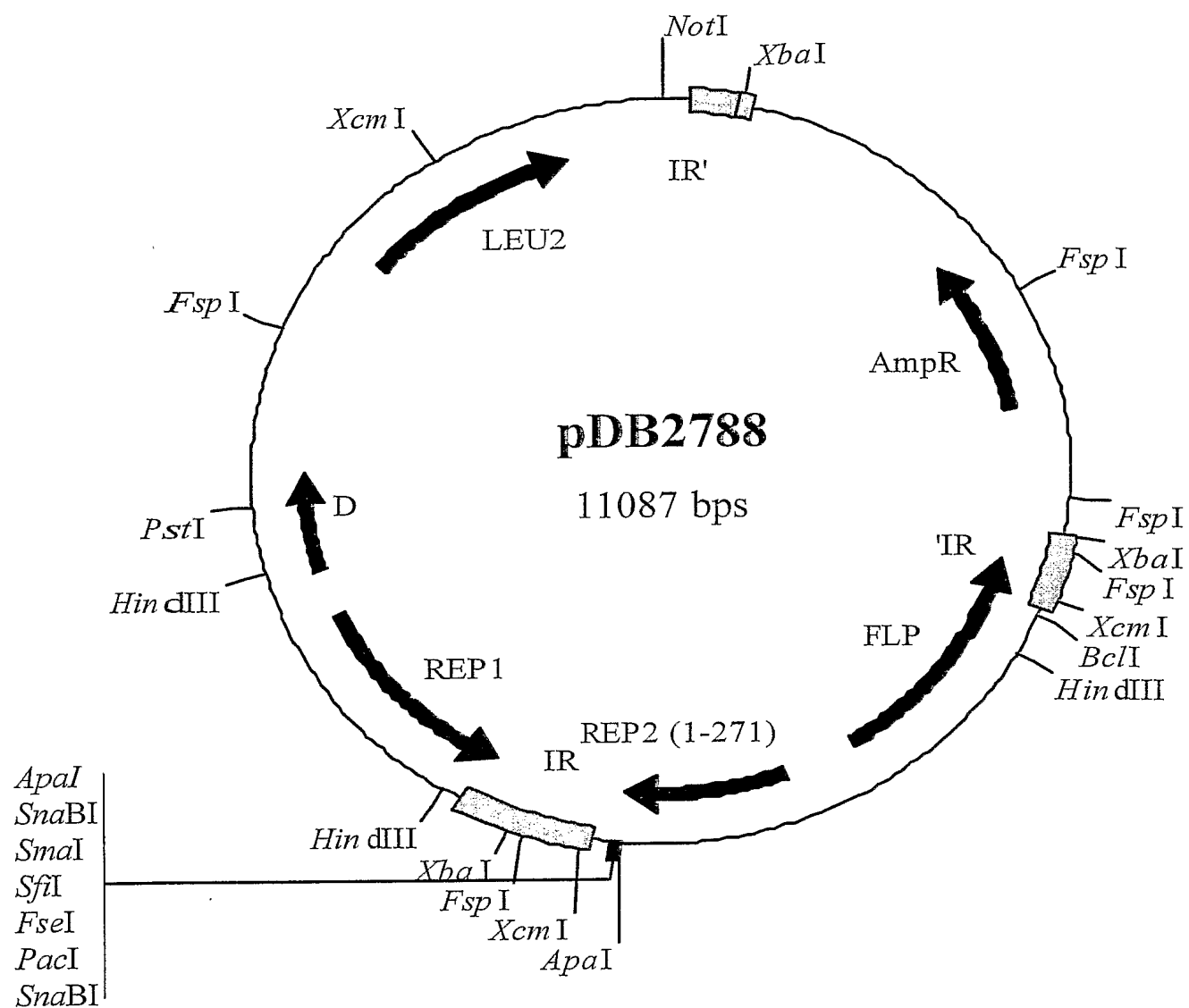
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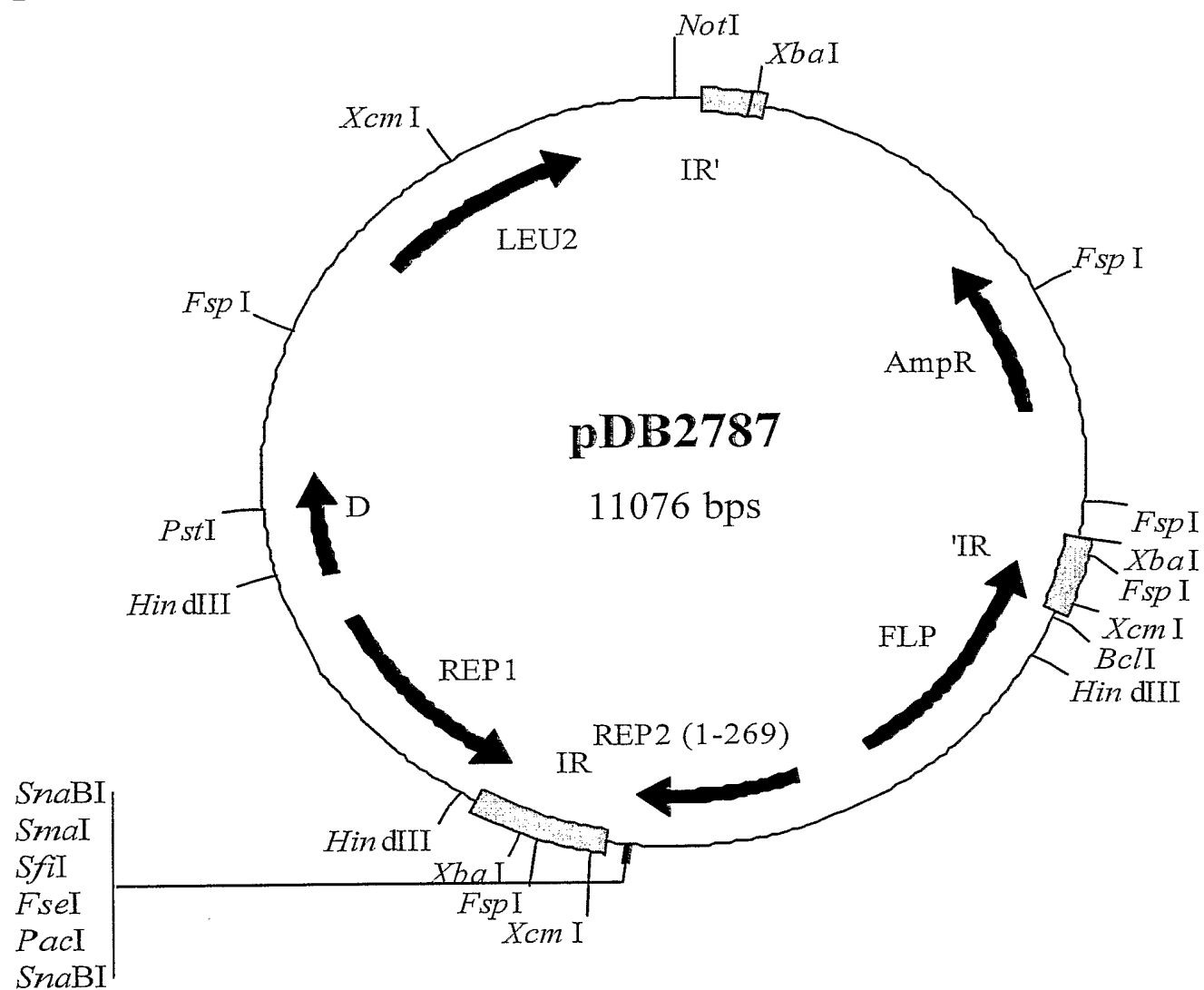
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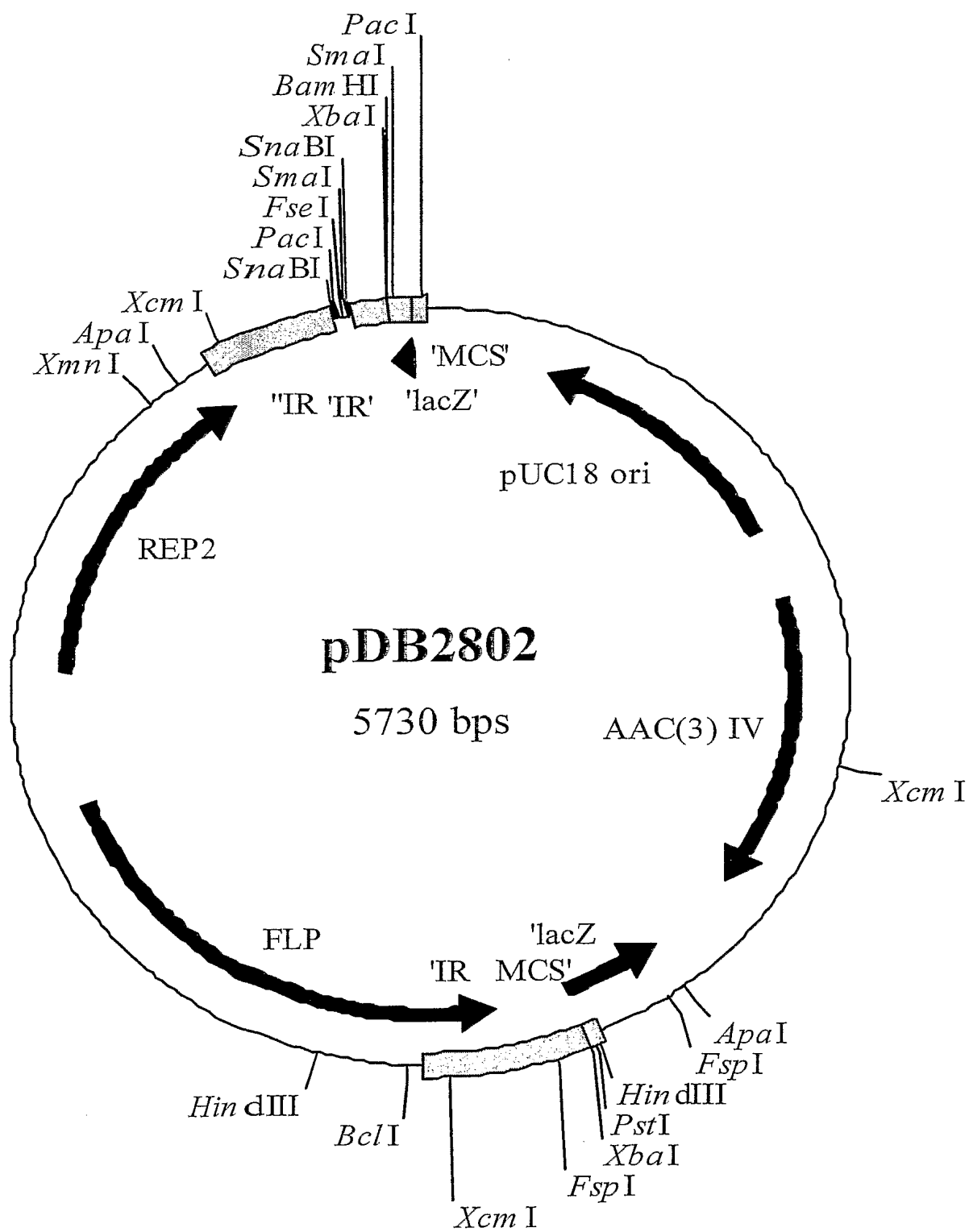
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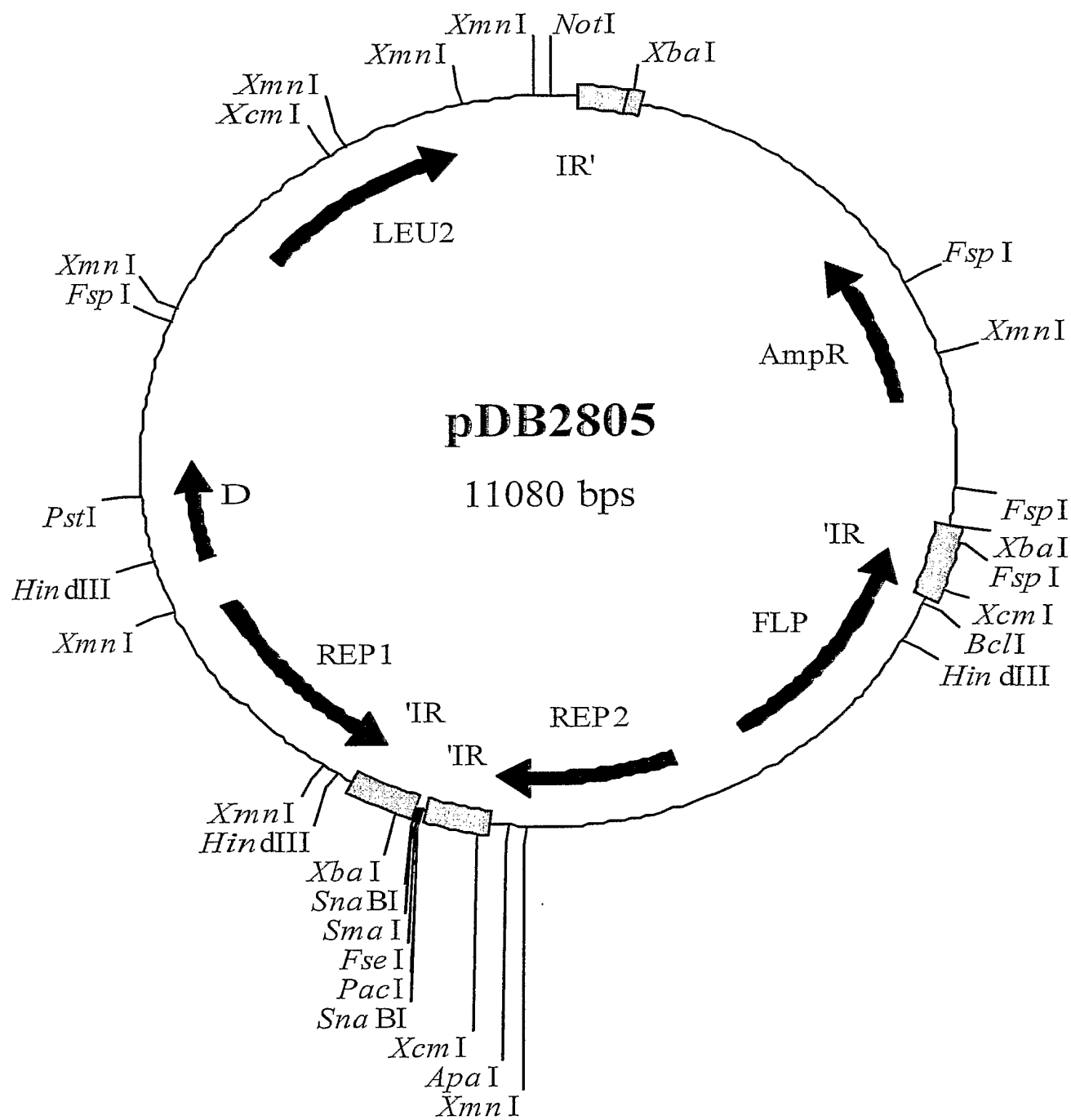
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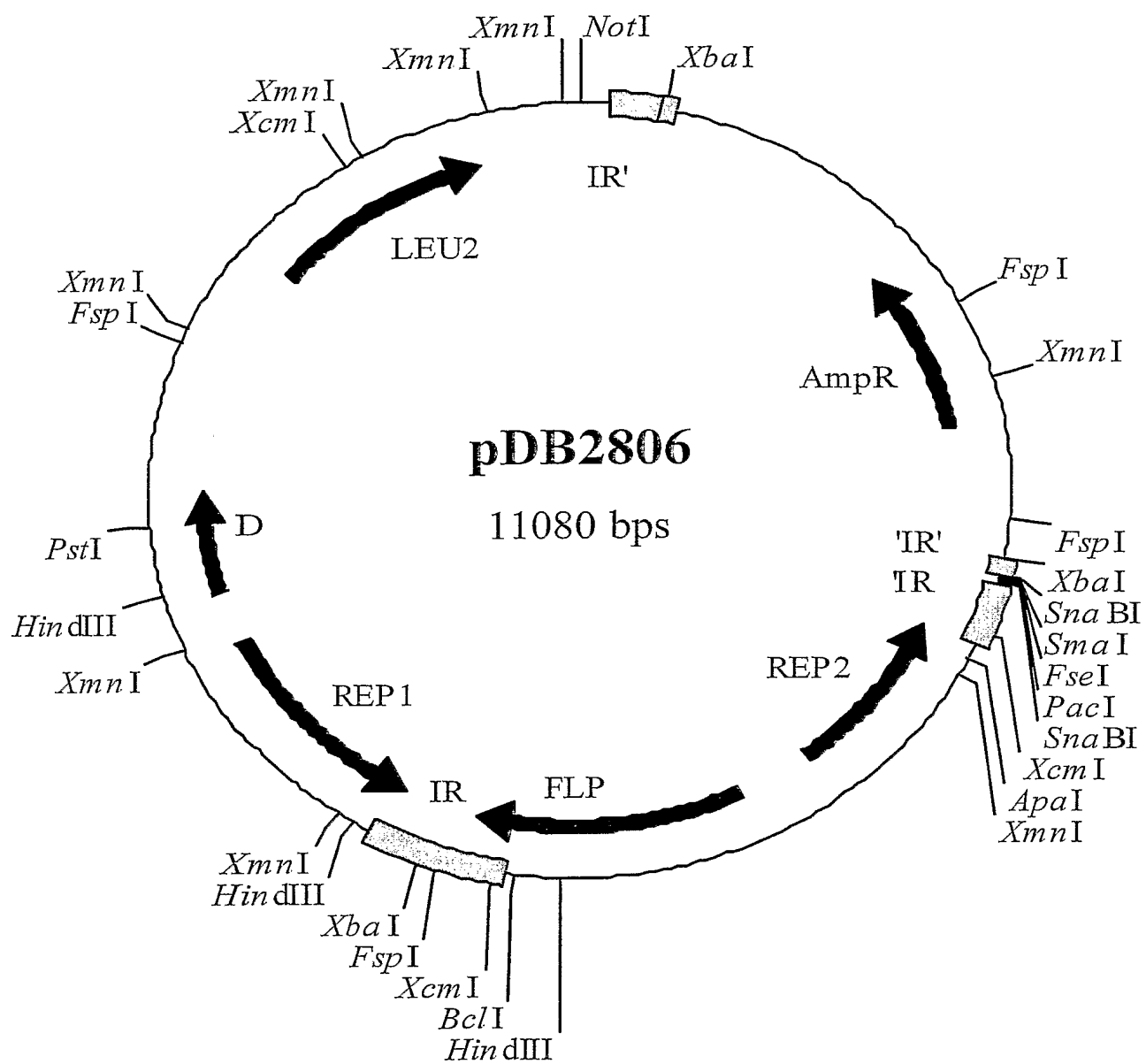
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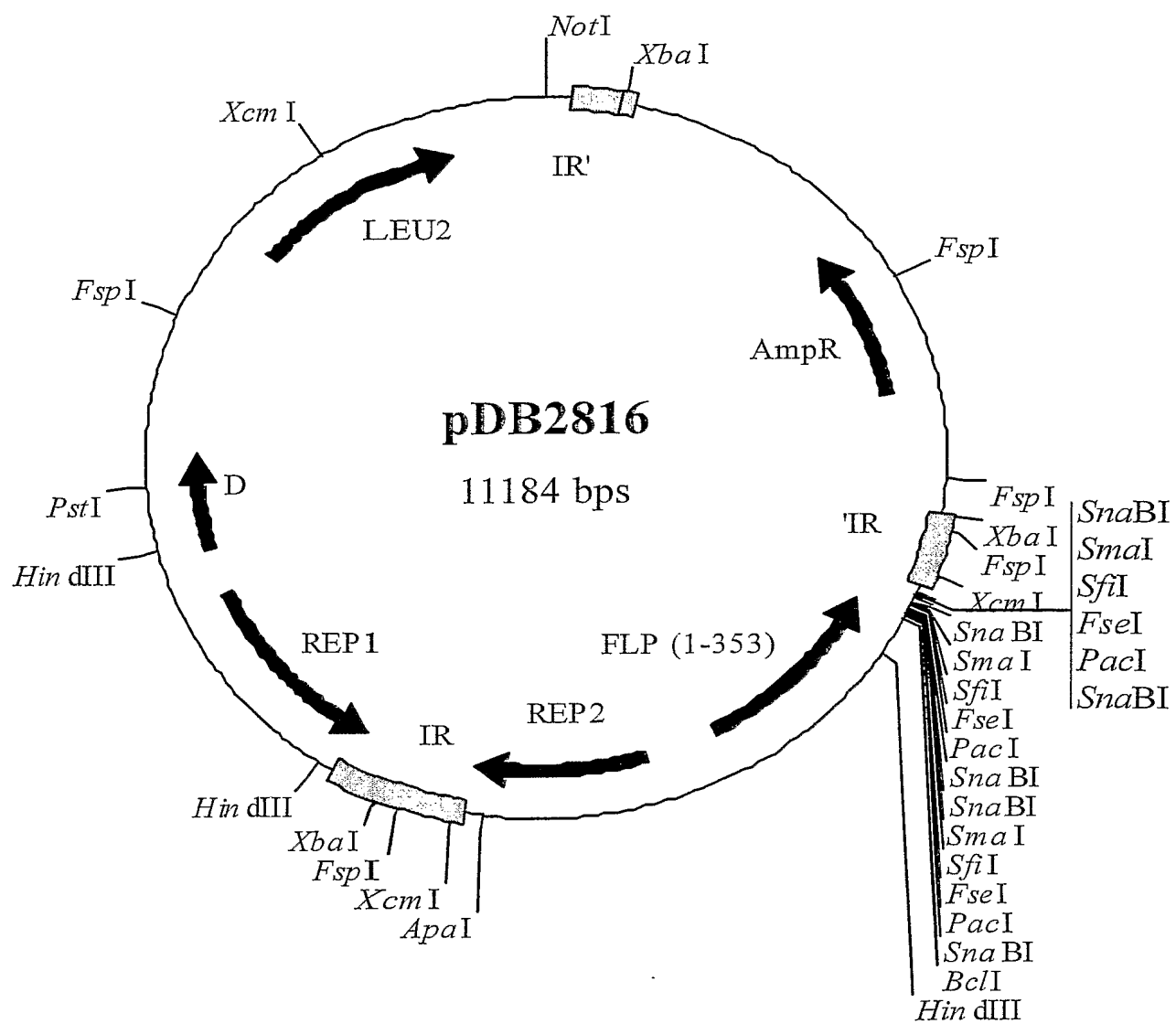
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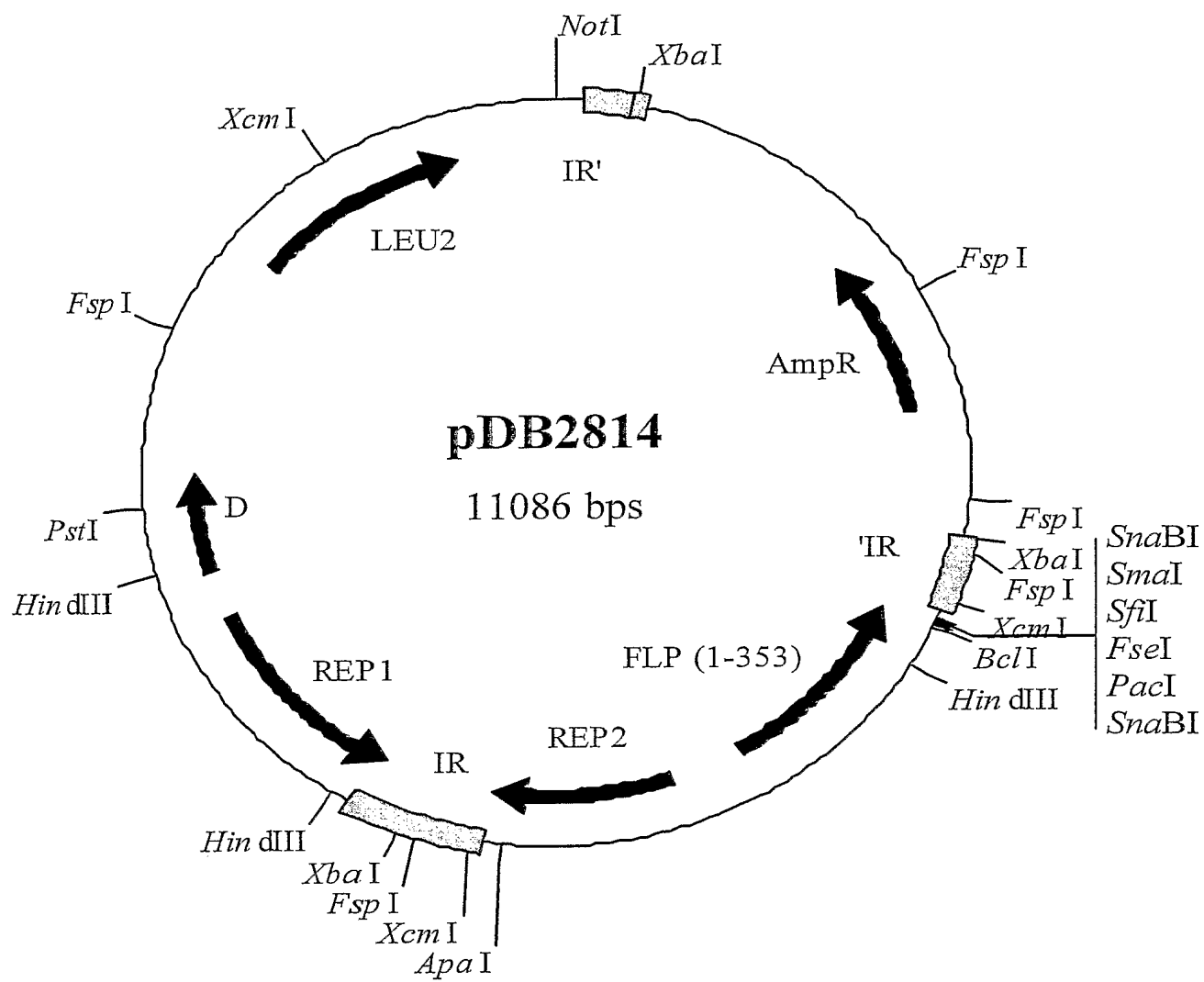
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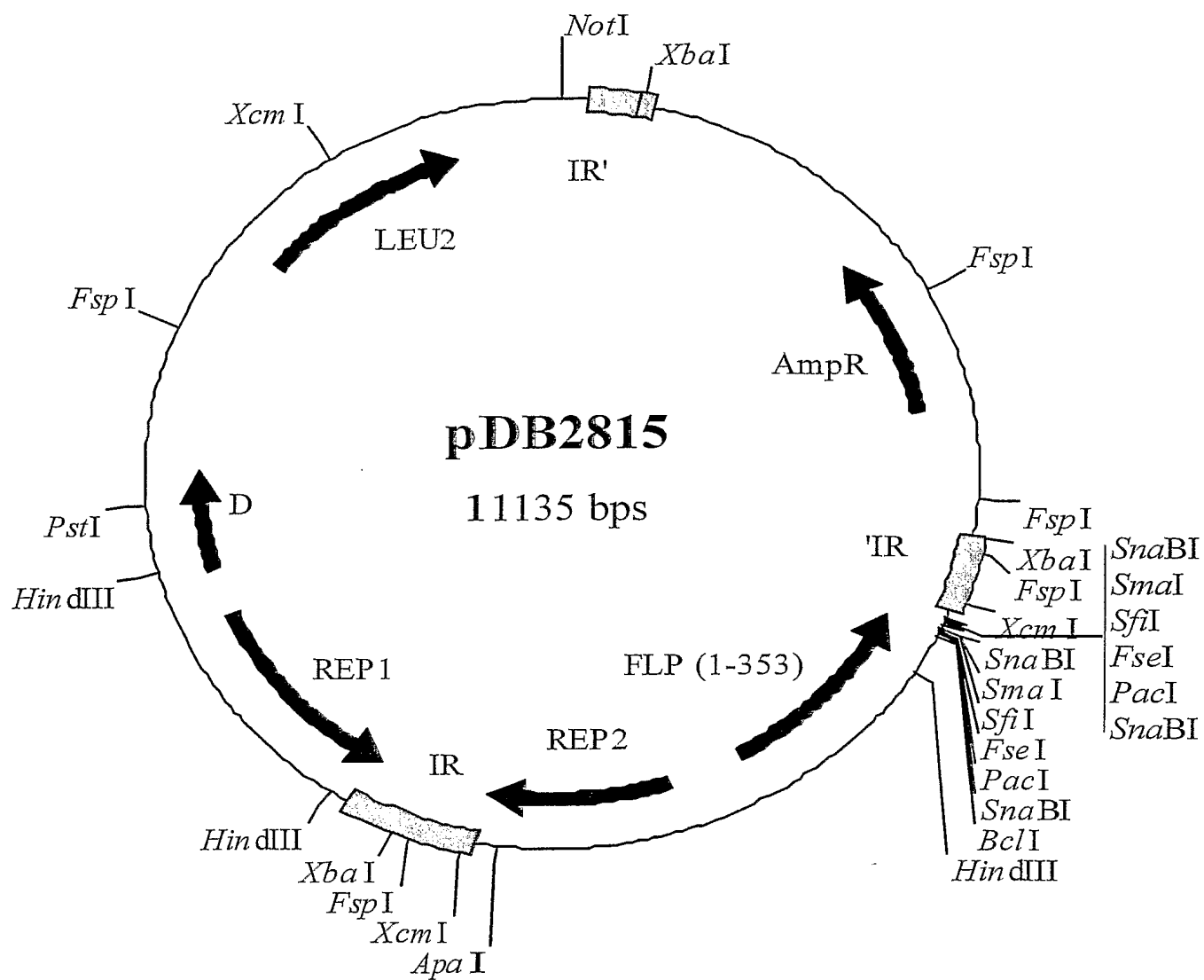
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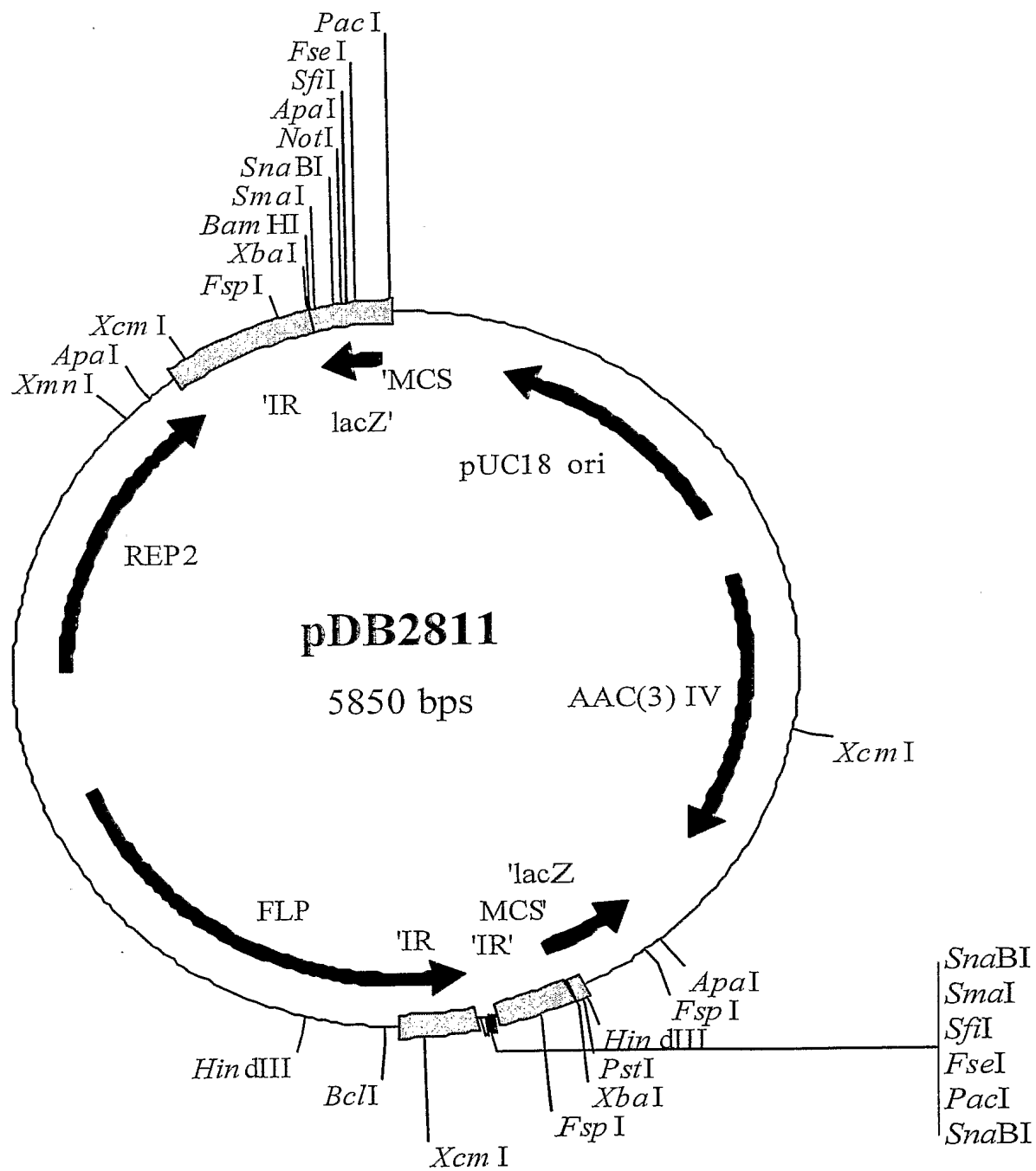
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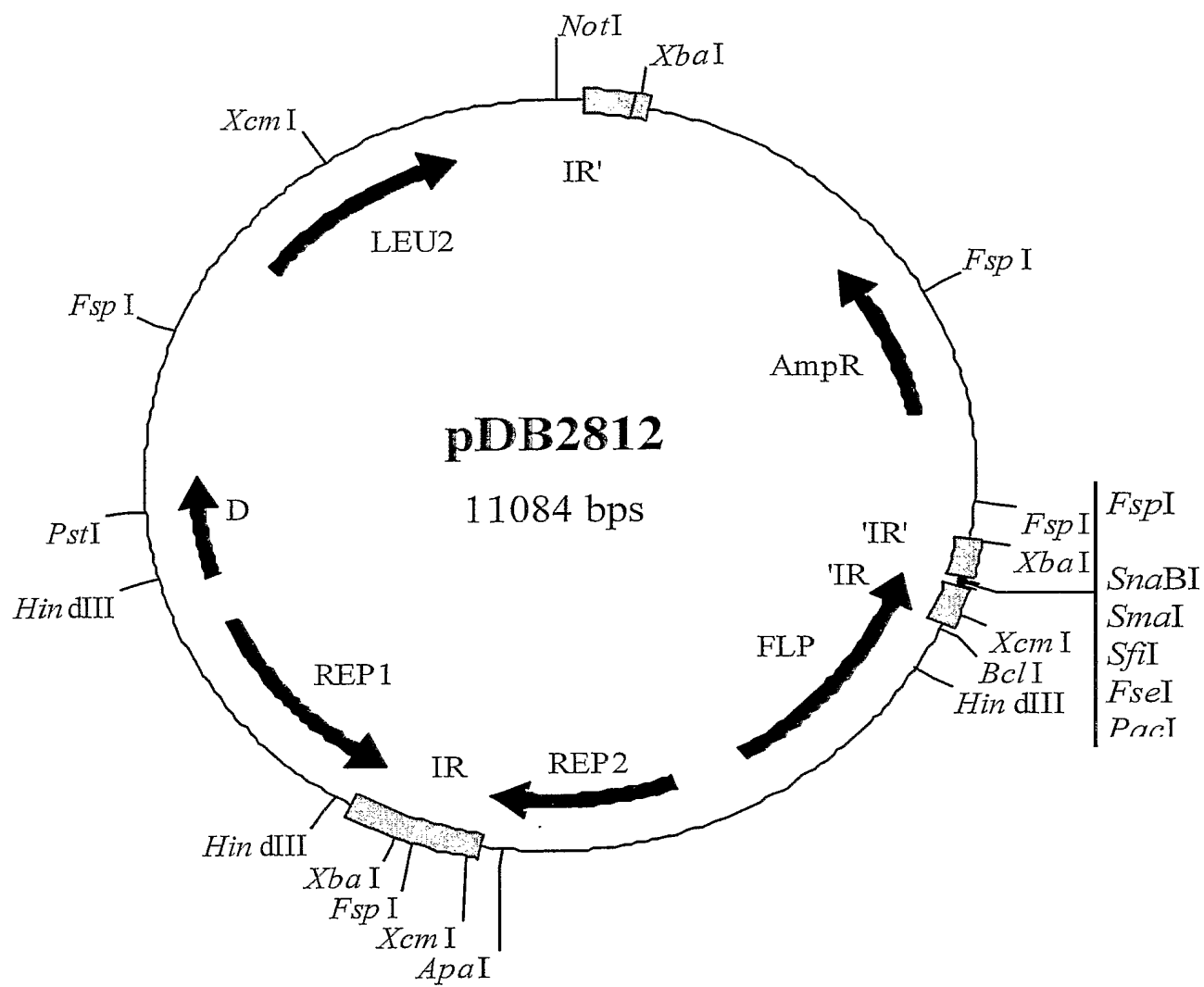
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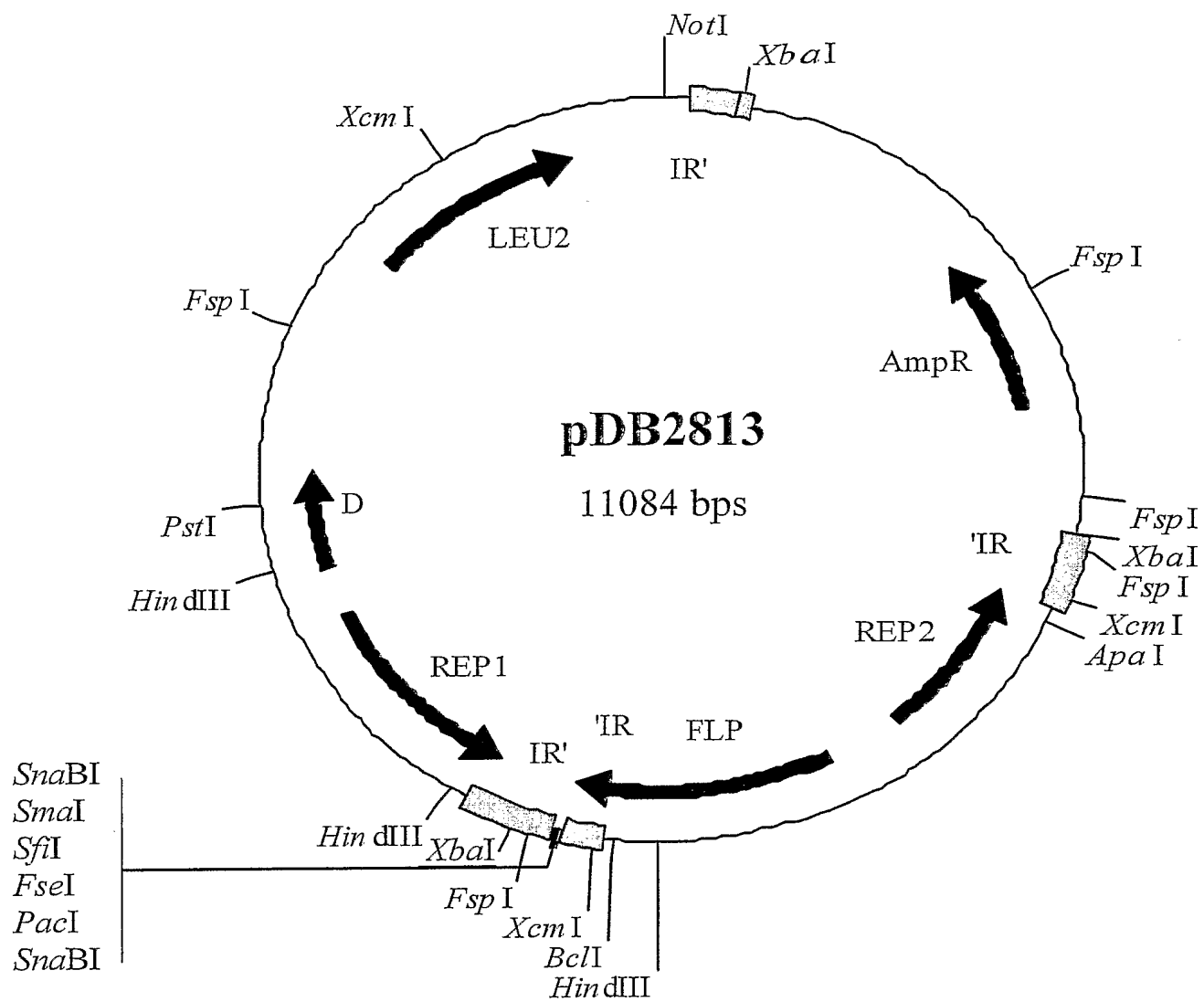
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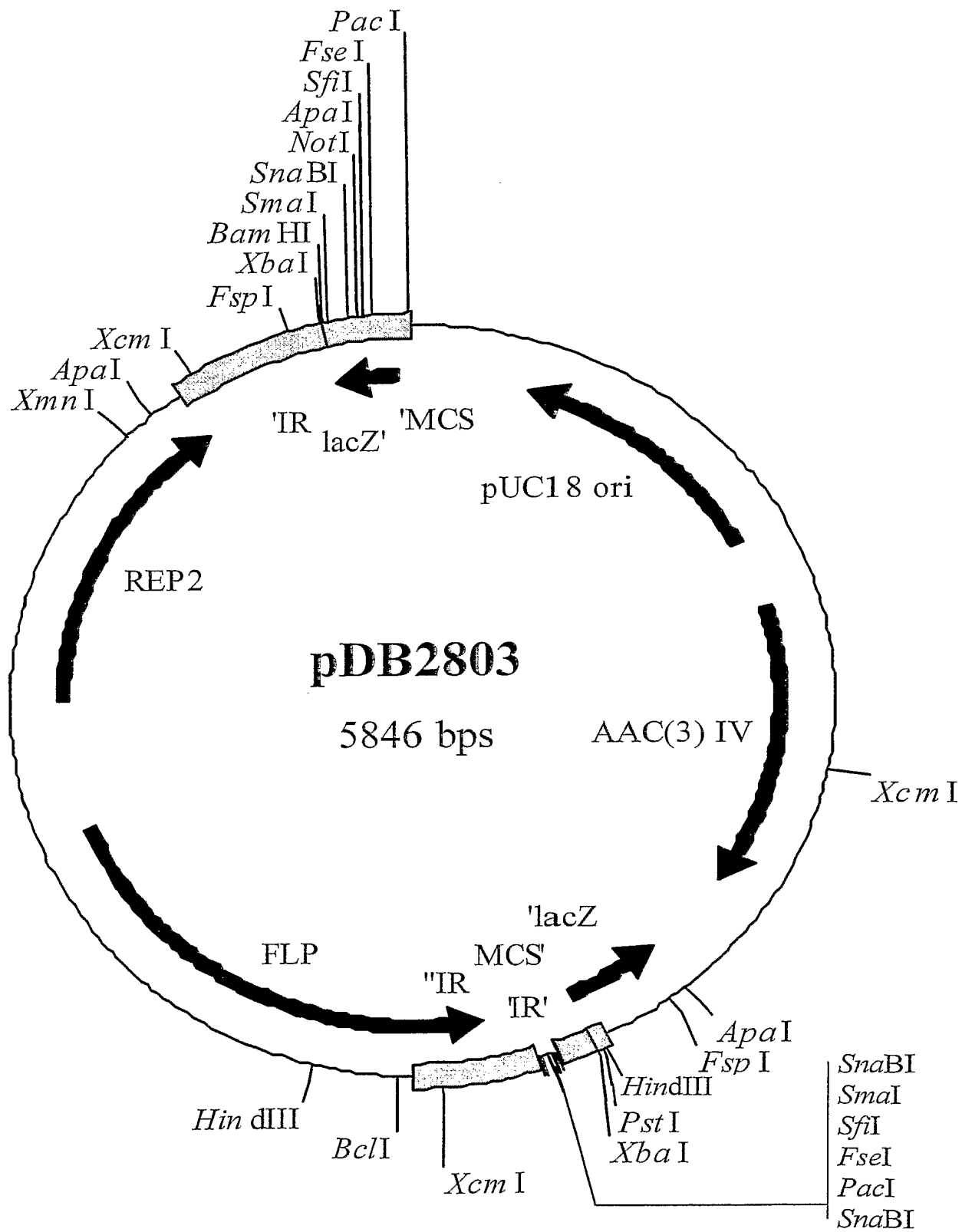
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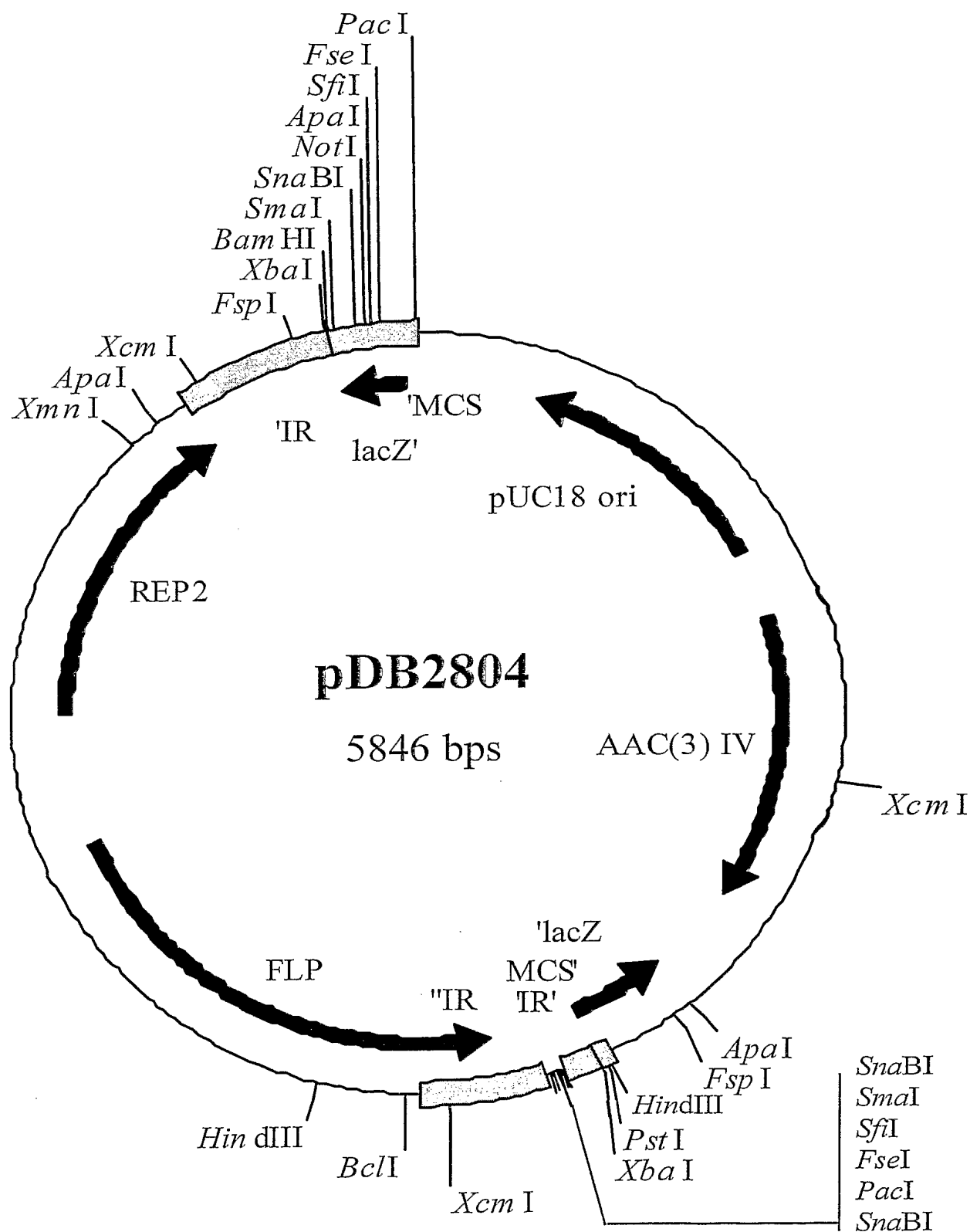
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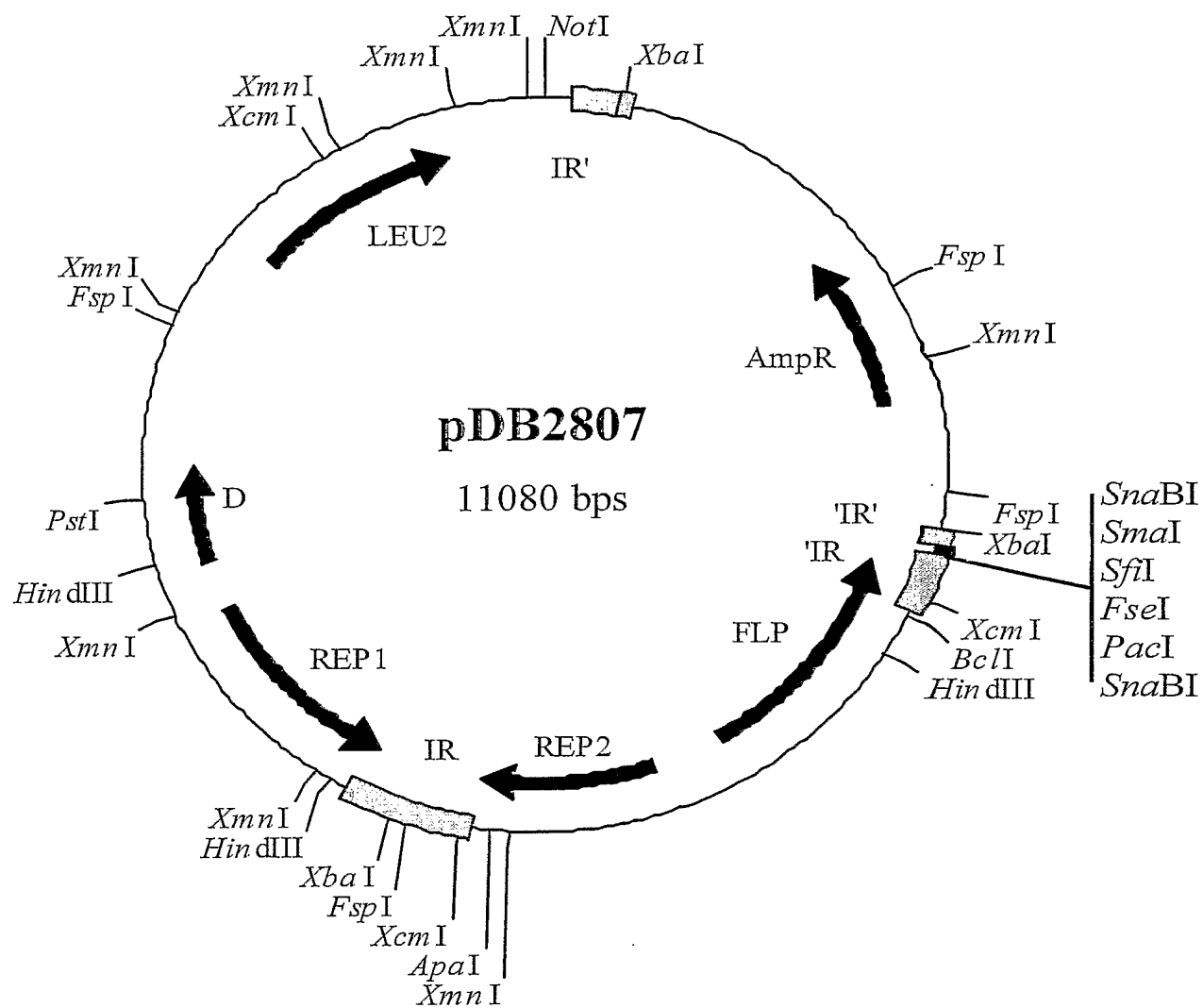
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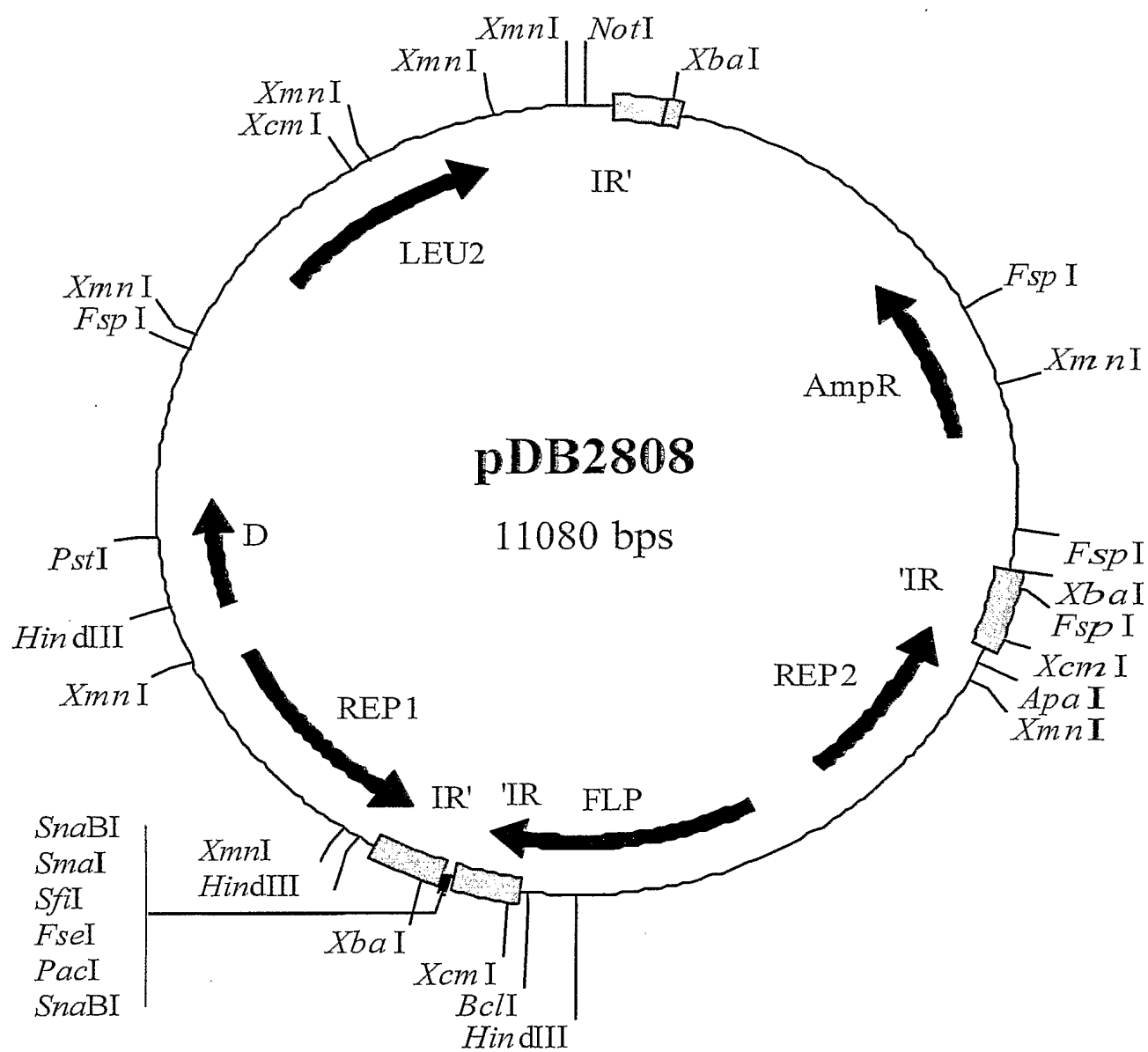
Figure 32

Figure 33A**Table 3 (part 1)**

Plasmid	Insertion Site	Insertion Site Details	2 μ m Form	Initial OD ₆₀₀	Leucine Prototrophs		
					Number	%	Average
pSAC35	-	-	B	0.074	100/100	100%	99%
pSAC35	-	-	B	0.068	95/98	97%	
pDB2818	<i>Xmn</i> I	REP2 (1-244)	A	0.062	32/100	32%	42%
pDB2818	<i>Xmn</i> I	REP2 (1-244)	A	0.059	52/100	52%	
pDB2787	<i>Apa</i> I/T4 pol.	REP2 (1-269)	B	0.054	34/100	34%	45%
pDB2787	<i>Apa</i> I/T4 pol.	REP2 (1-269)	B	0.084	45/100	45%	
pDB2788	<i>Apa</i> I	REP2 (1-271)	B	0.066	23/100	23%	33%
pDB2788	<i>Apa</i> I	REP2 (1-271)	B	0.051	43/100	43%	

Figure 33B**Table 3 (part 2)**

Plasmid	Insertion Site	Insertion Site Details	2µm Form	Initial OD ₆₀₀	Leucine Prototrophs		
					Number	%	Average
pDB2688	<i>XcmI</i>	Inverted Repeat	B	0.055	100/100	100%	100%
pDB2688	<i>XcmI</i>	Inverted Repeat	B	0.066	100/100	100%	
pDB2806	<i>FspI</i>	Inverted Repeat	A	0.073	100/100	100%	100%
pDB2806	<i>FspI</i>	Inverted Repeat	A	0.070	100/100	100%	
pDB2817	<i>XmnI</i>	REP2 (1-244)	B	0.063	36/100	36%	35%
pDB2817	<i>XmnI</i>	REP2 (1-244)	B	0.082	34/100	34%	
pDB2805	<i>FspI</i>	Inverted Repeat	B	0.069	100/100	100%	100%
pDB2805	<i>FspI</i>	Inverted Repeat	B	0.078	100/100	100%	
pDB2814	<i>BclI</i>	FLP (1-353), 1× Insert	B	0.080	69/100	69%	67%
pDB2814	<i>BclI</i>	FLP (1-353), 1× Insert	B	0.057	64/100	64%	
pDB2815	<i>BclI</i>	FLP (1-353), 2× Insert	B	0.067	70/100	70%	67%
pDB2815	<i>BclI</i>	FLP (1-353), 2× Insert	B	0.068	64/100	64%	

Figure 33C**Table 3 (part 3)**

Plasmid	Insertion Site	Insertion Site Details	2µm Form	Initial OD ₆₀₀	Leucine Prototrophs		
					Number	%	Average
pDB2816	<i>Bcl</i> I	FLP (1-353), 3× Insert	B	0.069	67/100	67%	74%
pDB2816	<i>Bcl</i> I	FLP (1-353), 3× Insert	B	0.056	81/100	81%	
pDB2689	<i>Xcm</i> I	C-terminal FLP Mutant (FLP 1-384, plus 56 other residues)	B	0.054	73/100	73%	75%
pDB2689	<i>Xcm</i> I	C-terminal FLP Mutant (FLP 1-384, plus 56 other residues)	B	0.056	77/100	77%	
pDB2786	<i>Xcm</i> I	C-terminal FLP Mutant (FLP 1-384, plus 14 other residues)	B	0.079	73/100	73%	67%
pDB2786	<i>Xcm</i> I	C-terminal FLP Mutant (FLP 1-384, plus 14 other residues)	B	0.052	61/100	61%	
pDB2823	<i>Xcm</i> I	FLP (1-382)	B	0.071	70/100	70%	64%
pDB2823	<i>Xcm</i> I	FLP (1-382)	B	0.055	57/100	57%	

Figure 33D**Table 3 (part 4)**

Plasmid	Insertion Site	Insertion Site Details	2 μ m Form	Initial OD ₆₀₀	Leucine Prototrophs		
					Number	%	Average
pDB2813	<i>Hgal</i>	Inverted Repeat	A	0.057	100/100	100%	100%
pDB2813	<i>Hgal</i>	Inverted Repeat	A	0.076	100/100	100%	
pDB2808	<i>FspI</i>	Inverted Repeat	A	0.058	100/100	100%	100%
pDB2808	<i>FspI</i>	Inverted Repeat	A	0.060	100/100	100%	
pDB2812	<i>Hgal</i>	Inverted Repeat	B	0.062	100/100	100%	100%
pDB2812	<i>Hgal</i>	Inverted Repeat	B	0.071	100/100	100%	

Figure 34

SEQ ID NO:1

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Figure 35

SEQ ID NO:2

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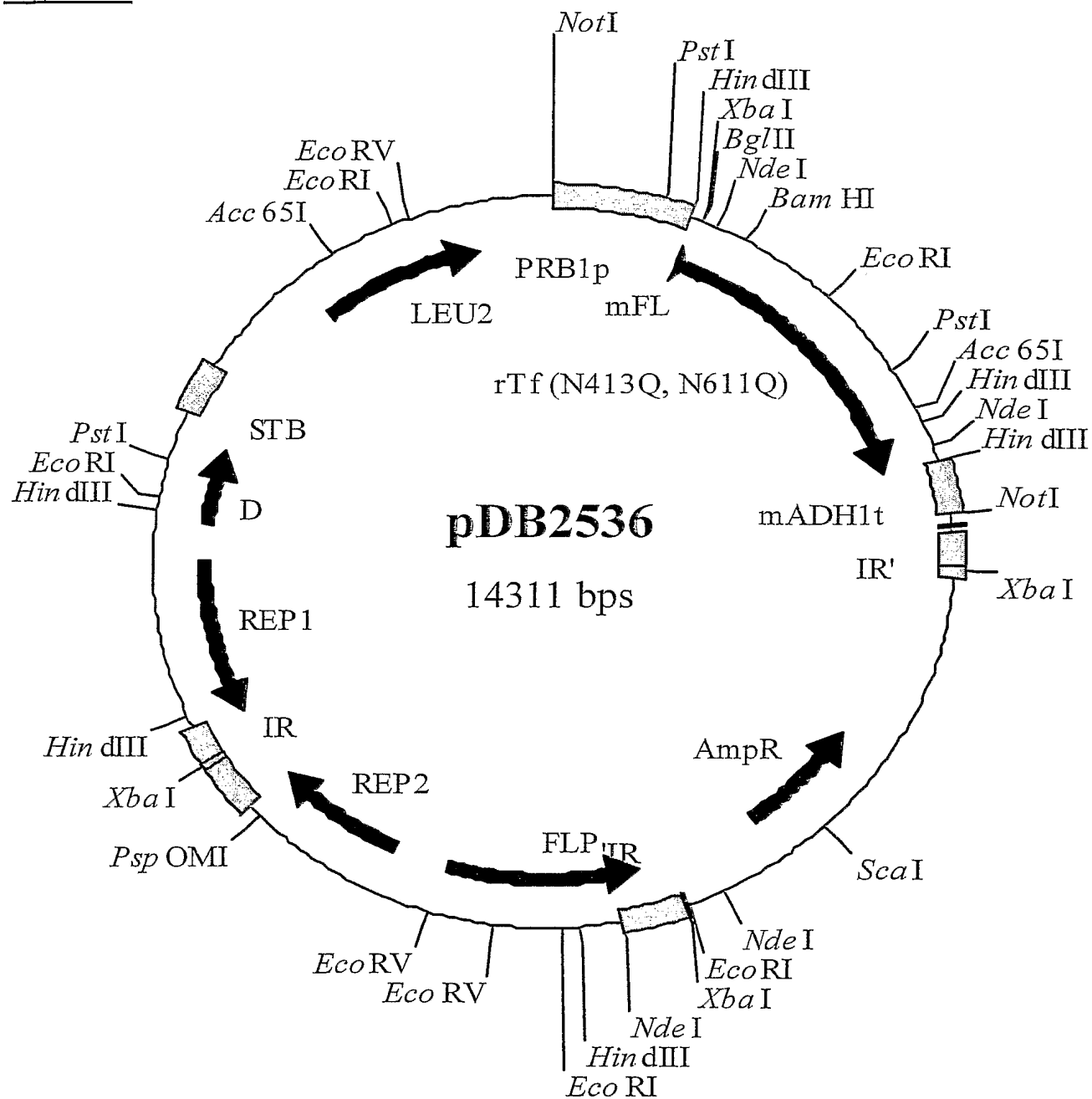
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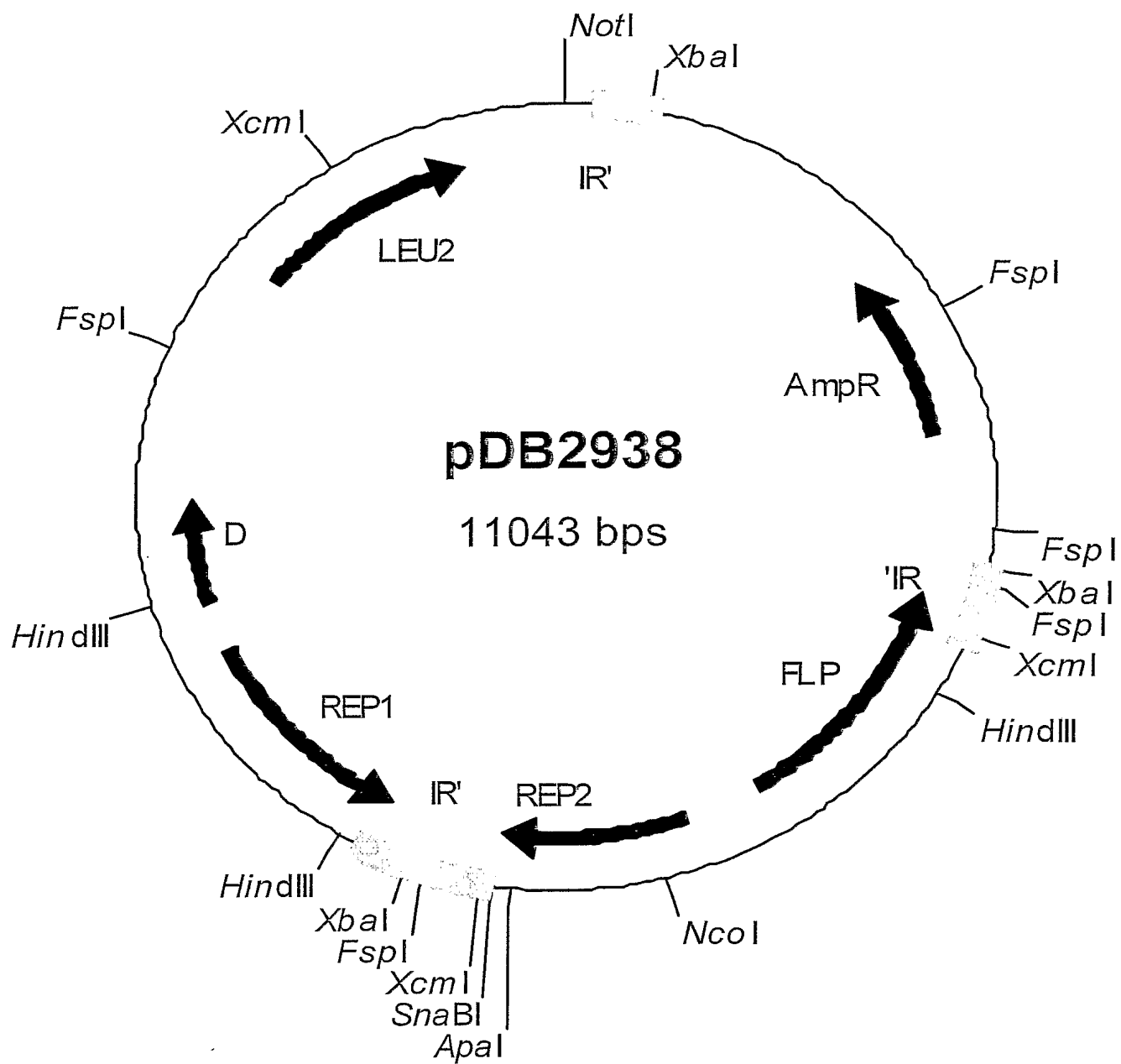
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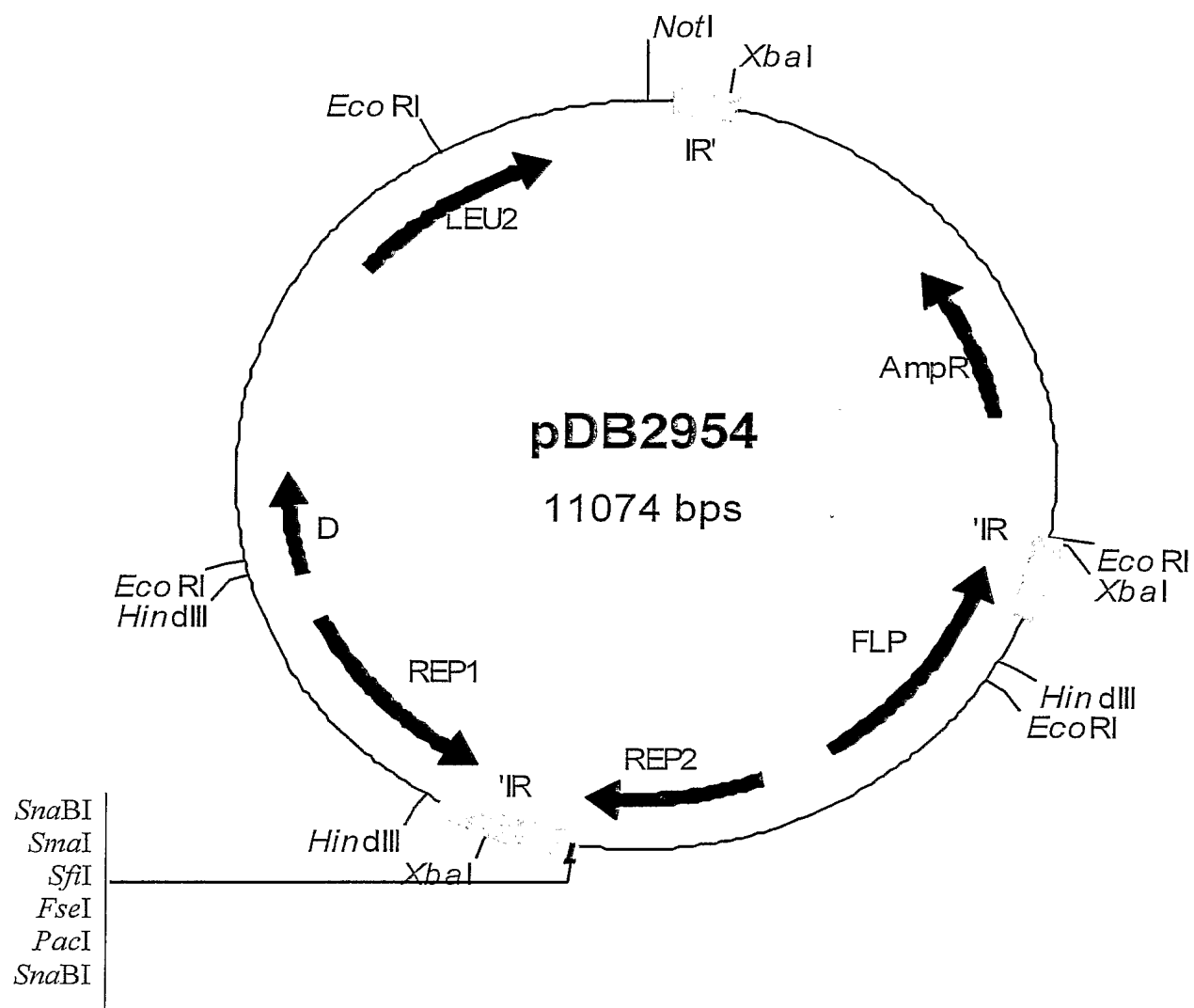
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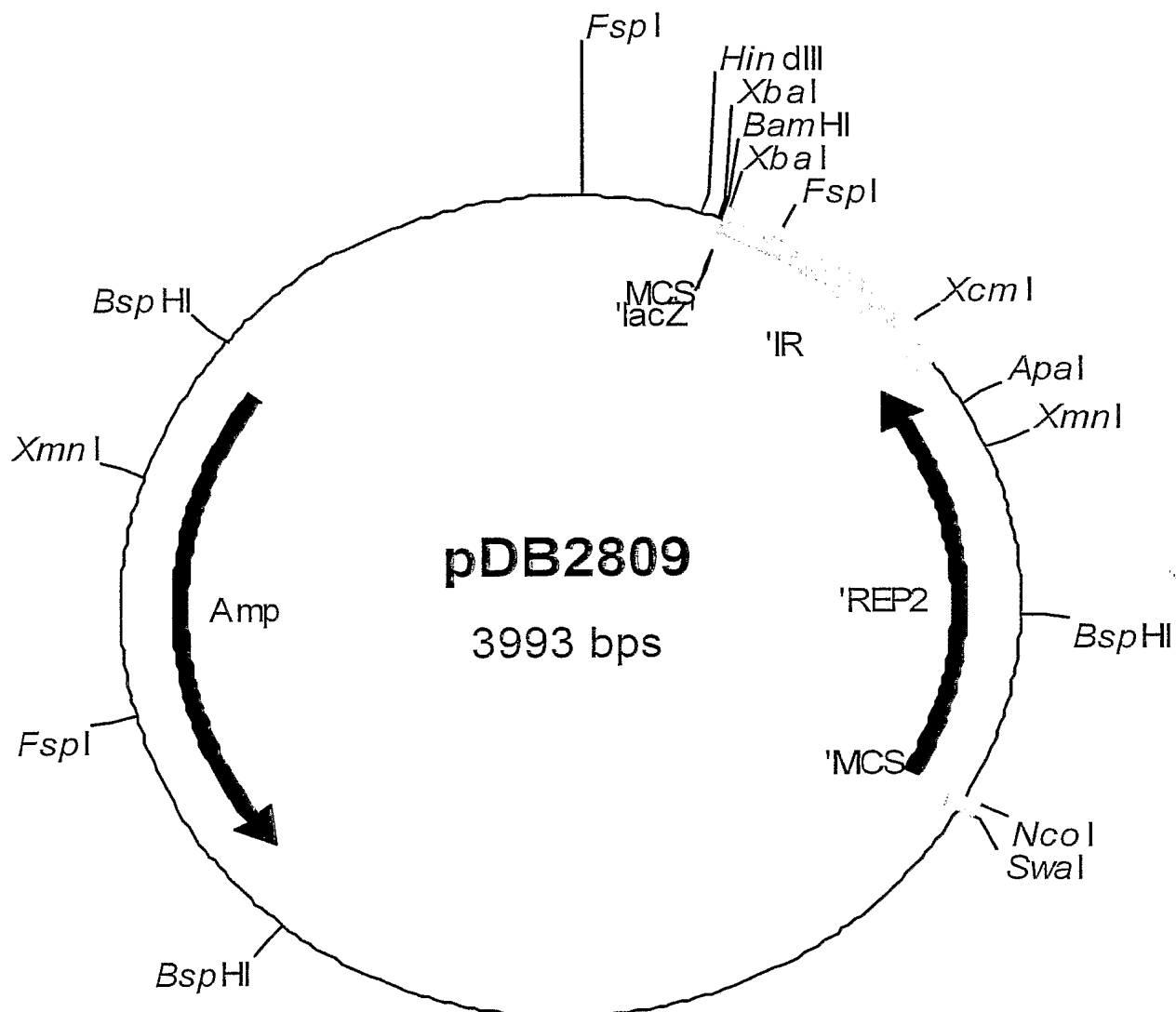
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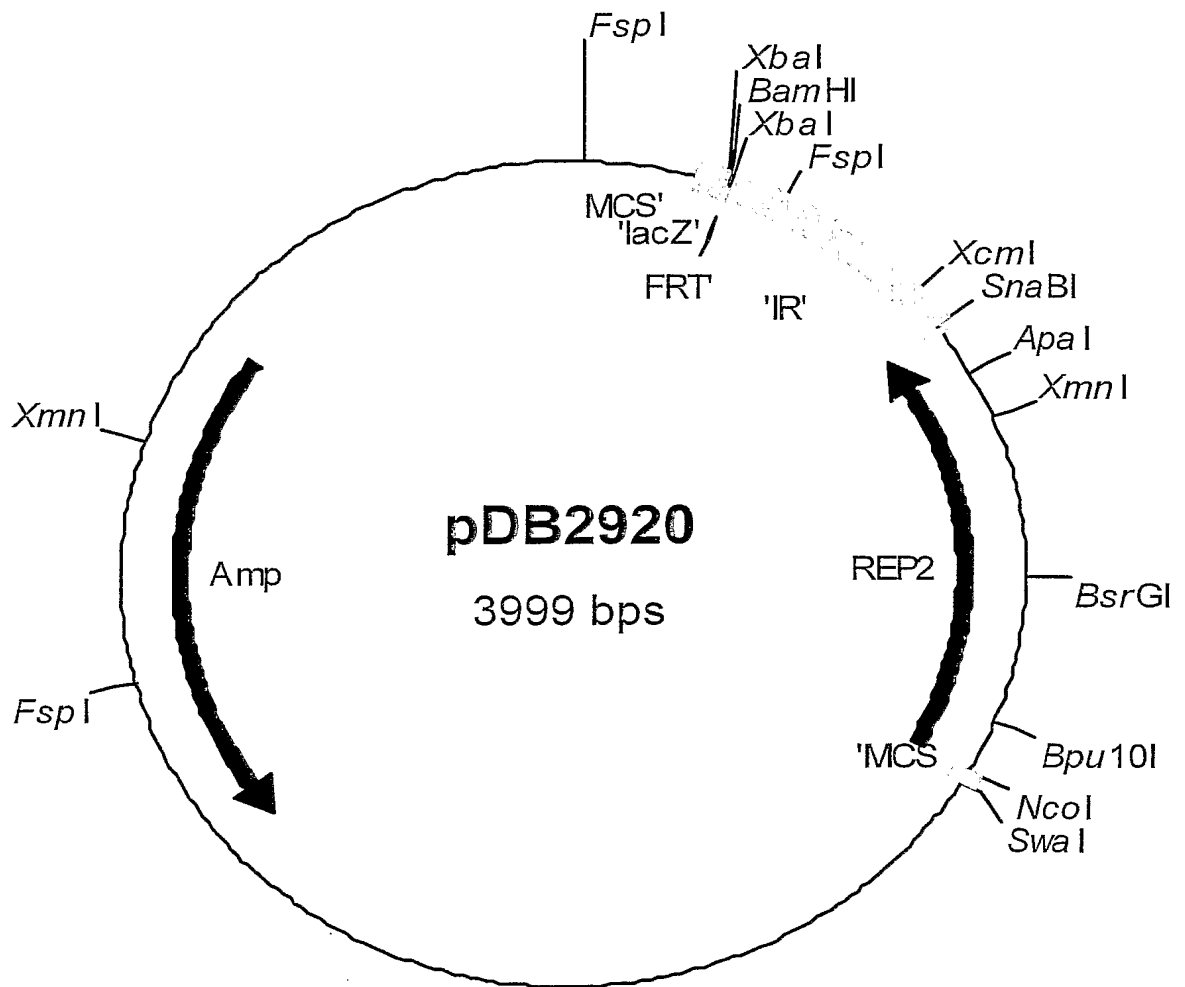
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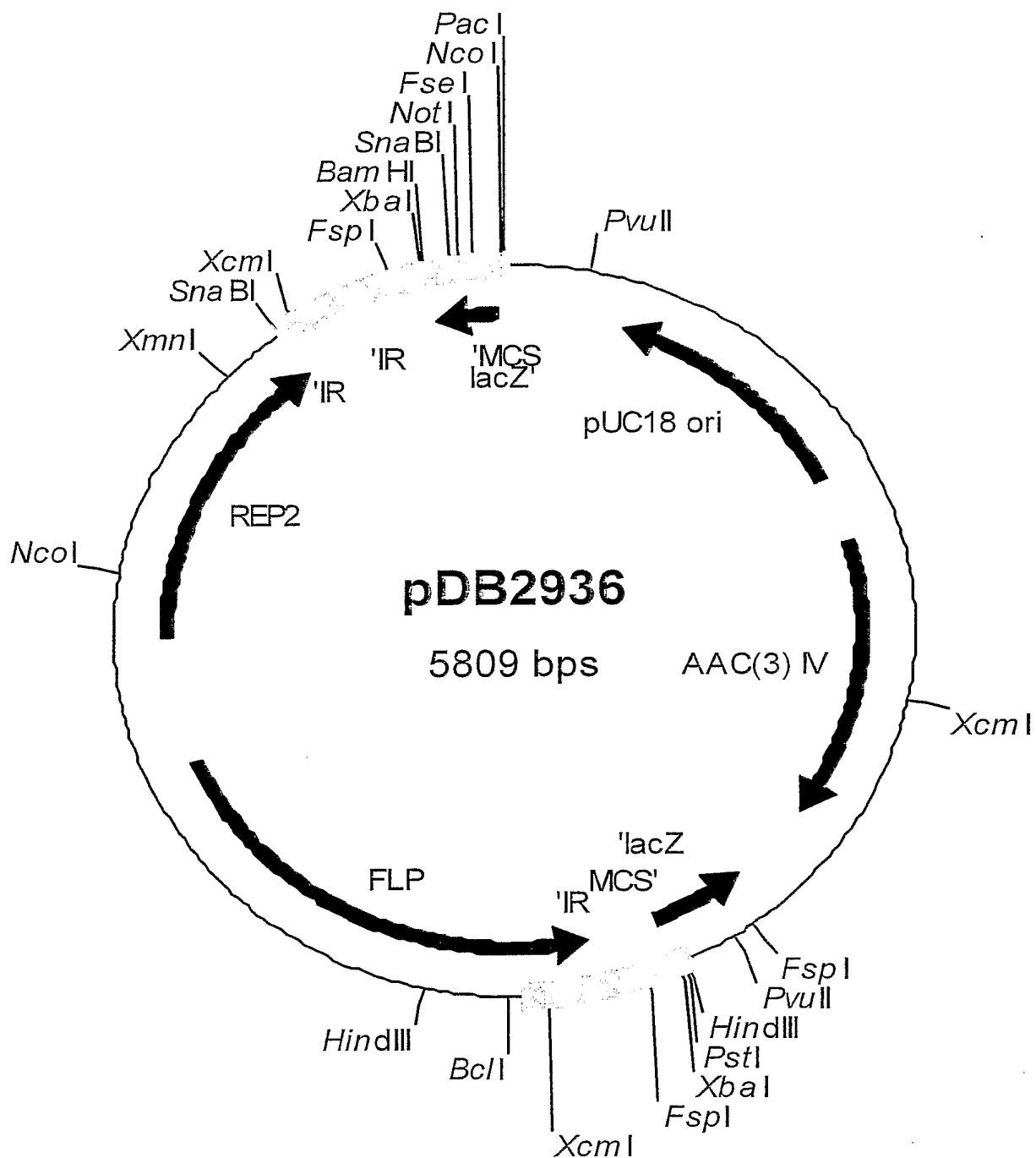
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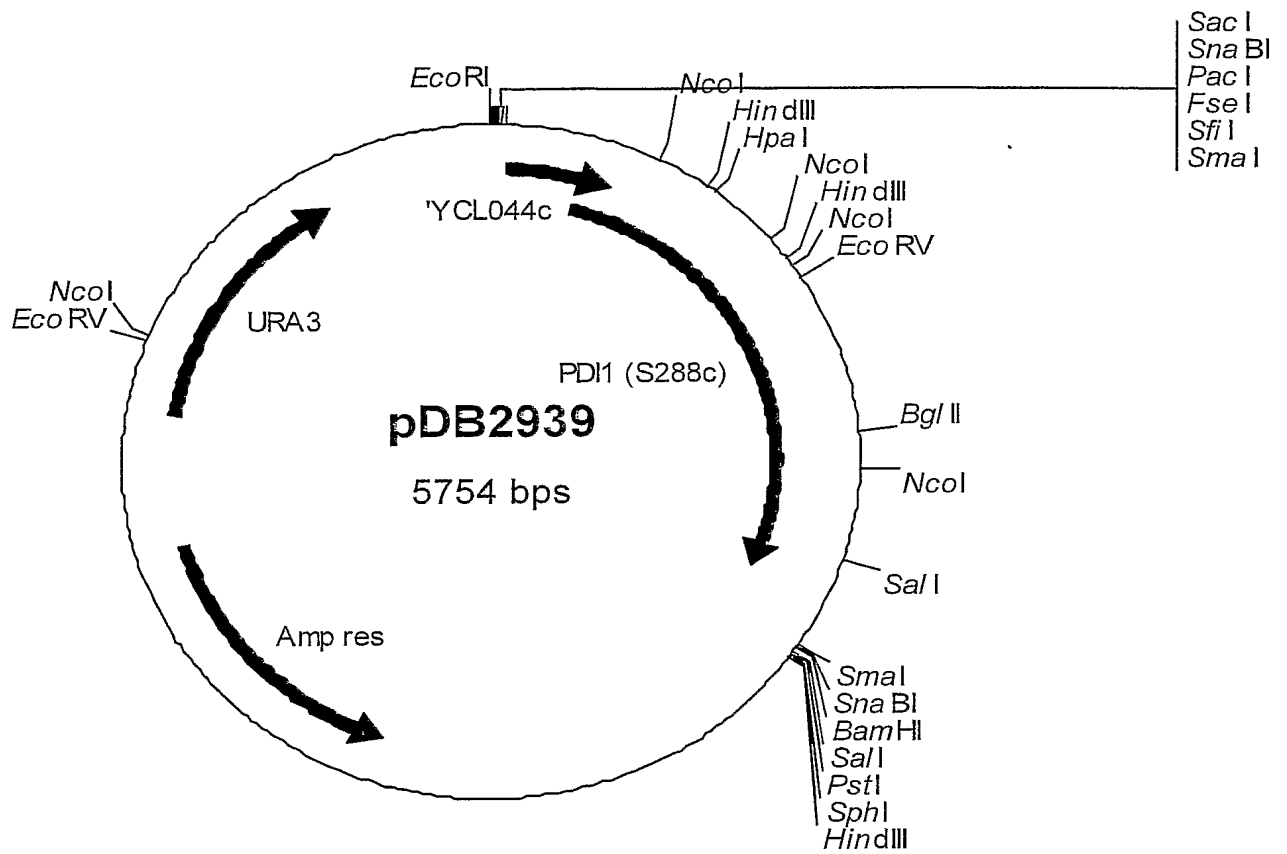
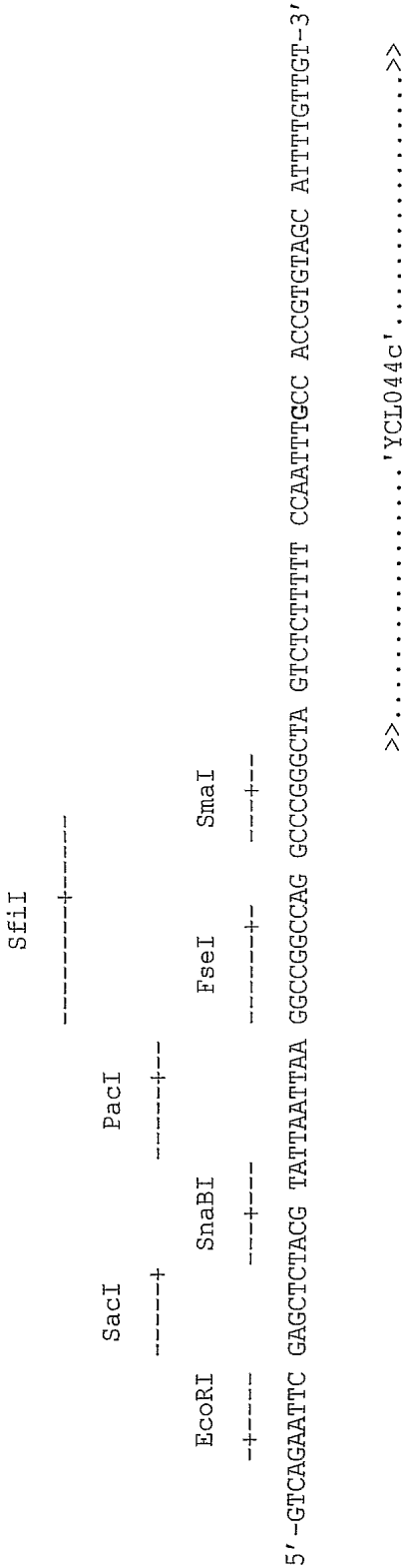
Figure 42

Figure 43

PCR Primers DS248 and DS250 for amplification of *S. cerevisiae PDII* genes

DS248



DS250

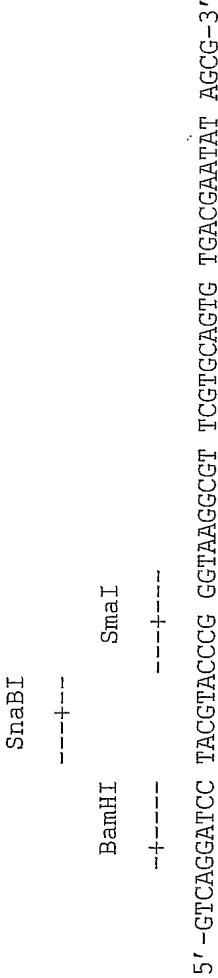


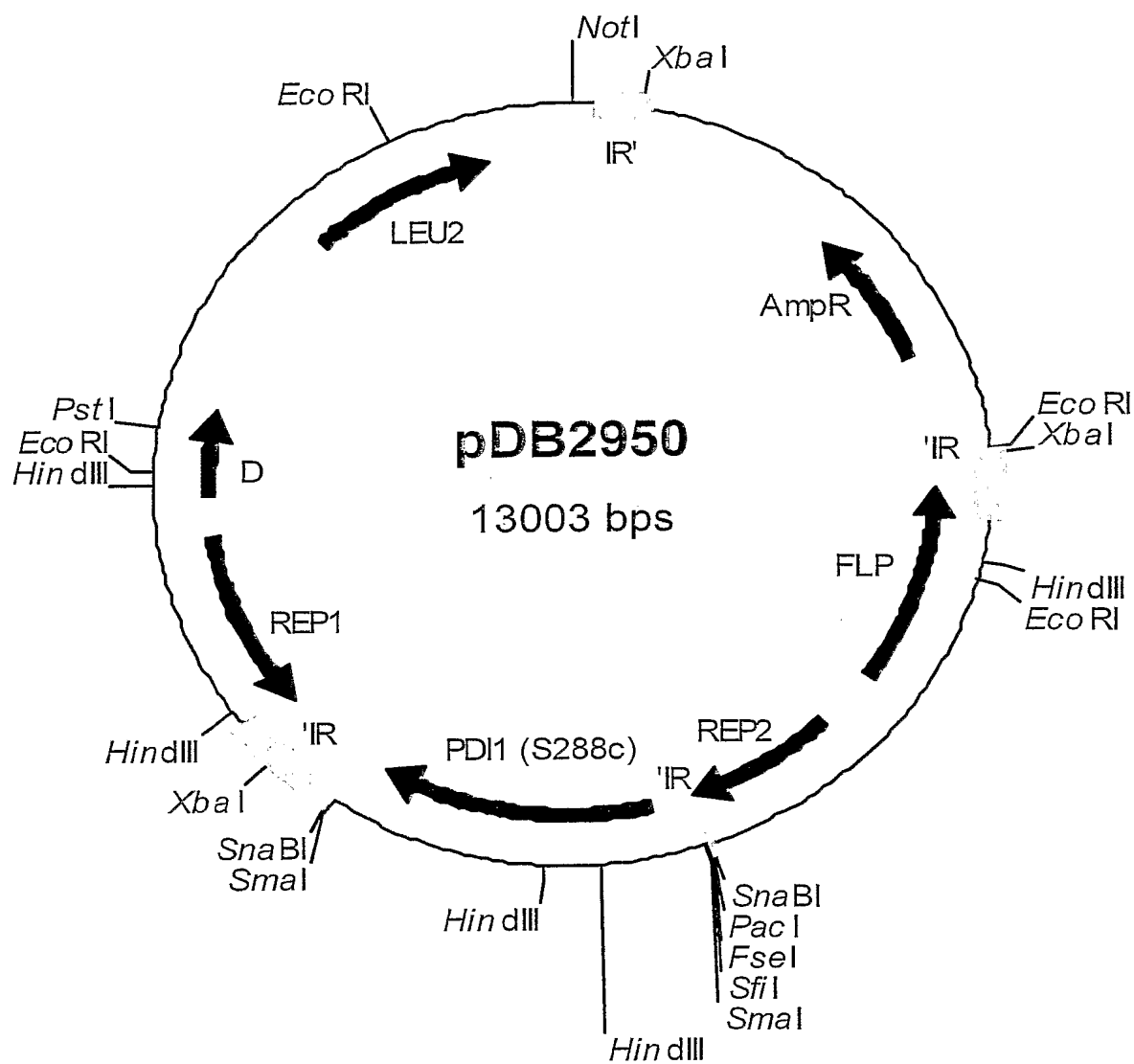
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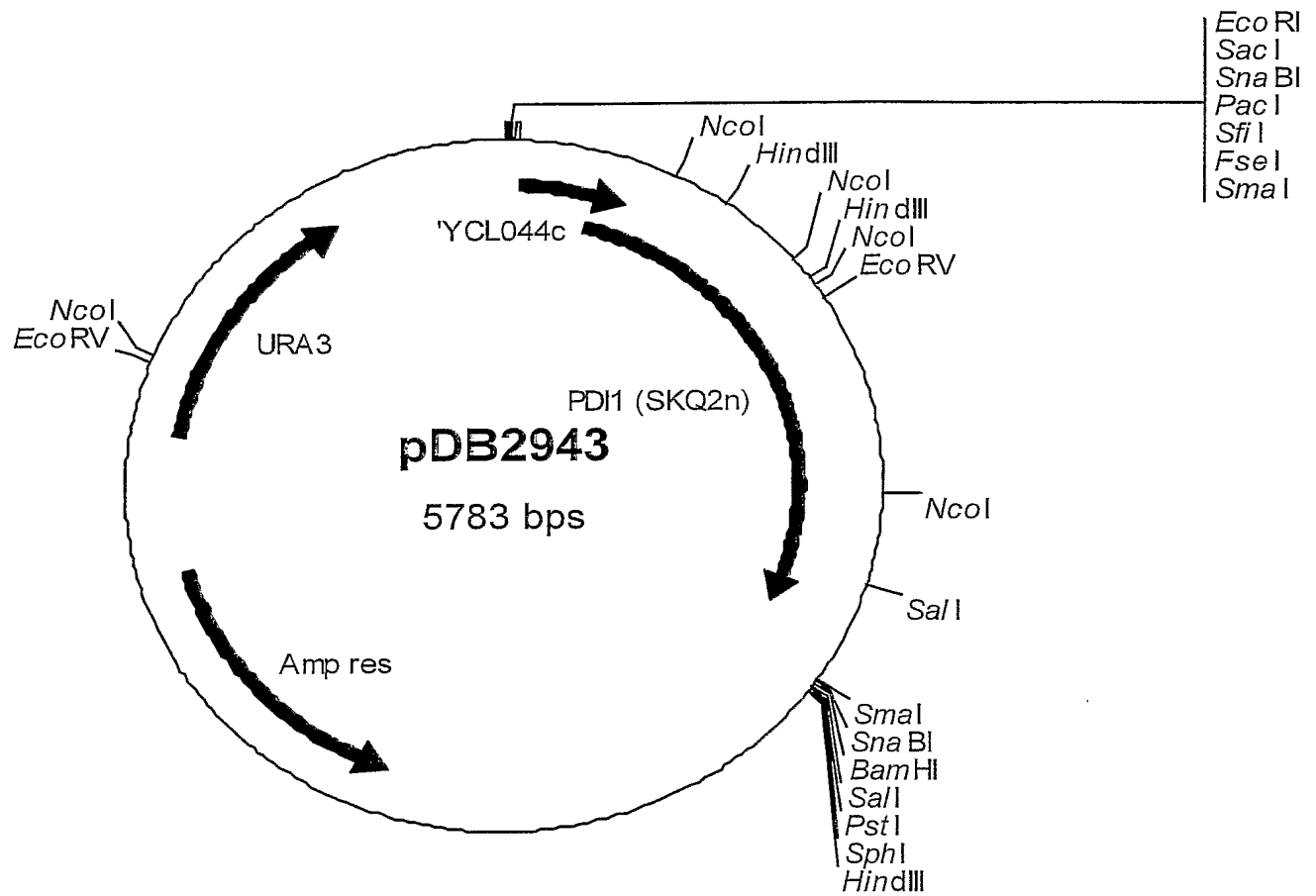
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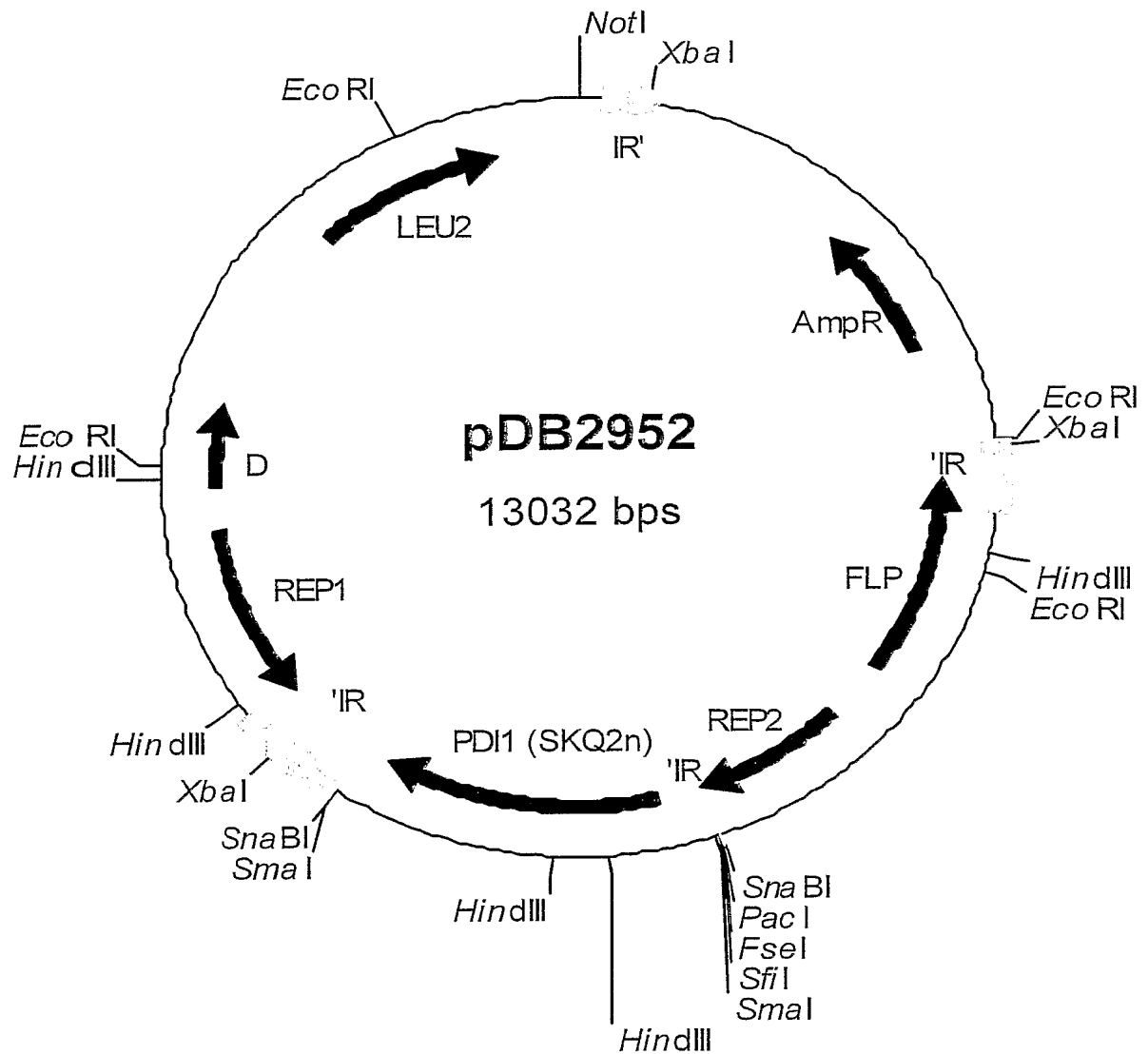
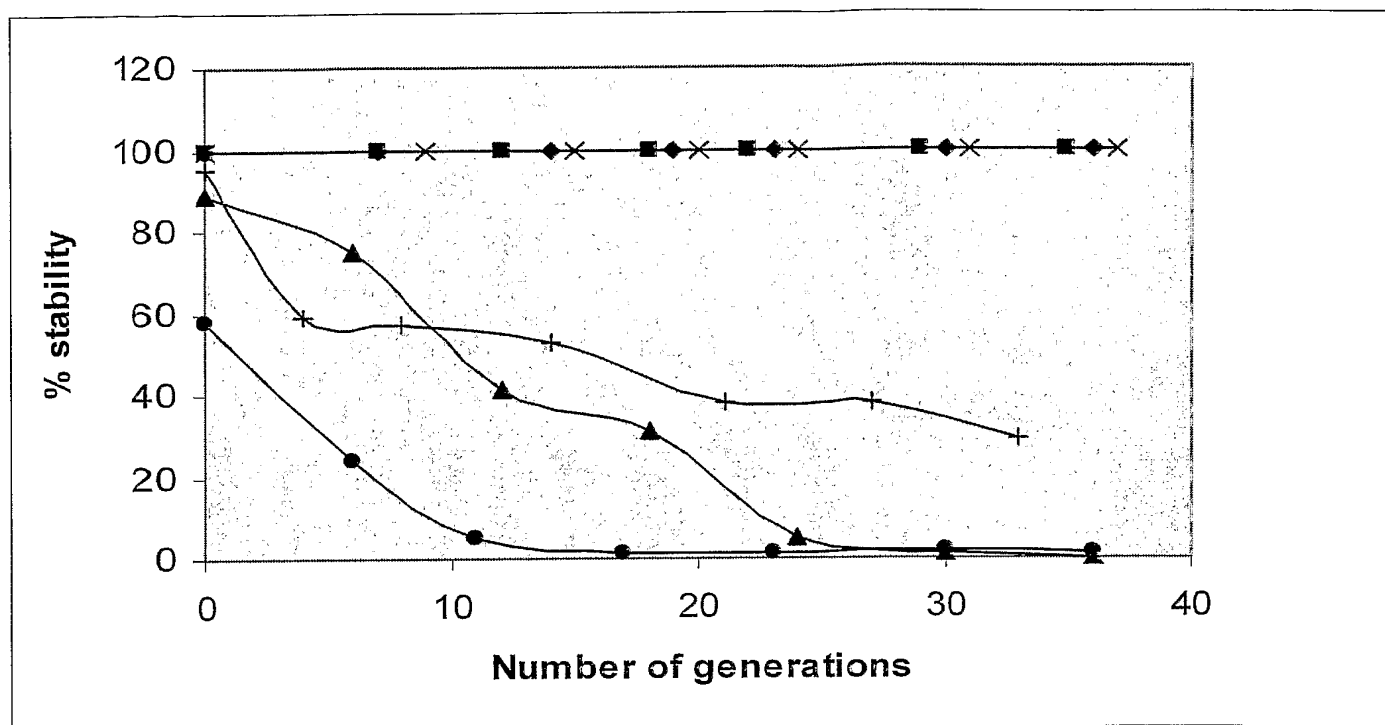
Figure 46

Figure 47**KEY**

- ◆— pSAC35
- pDB2688
- ×— pDB2812
- +— pDB2690
- ▲— pDB2817
- pDB2711

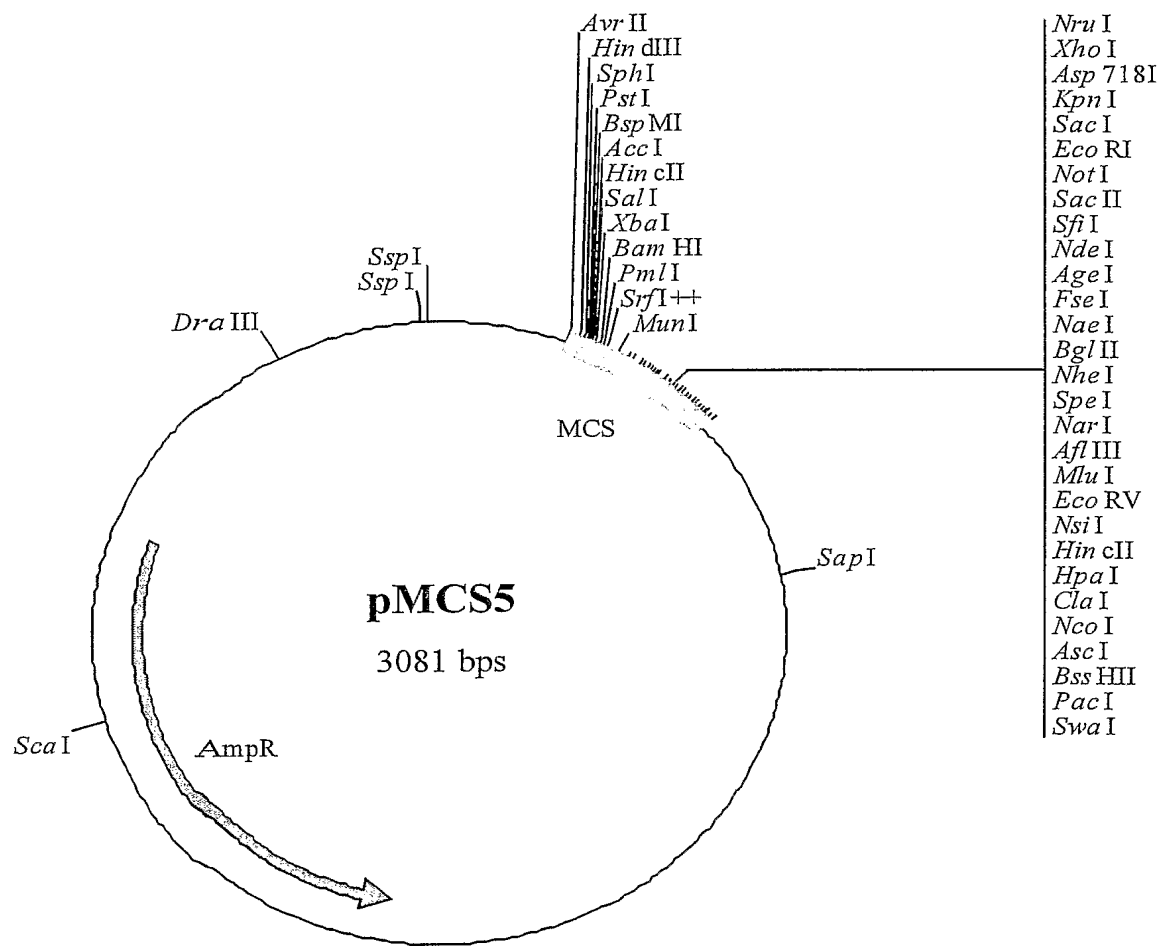
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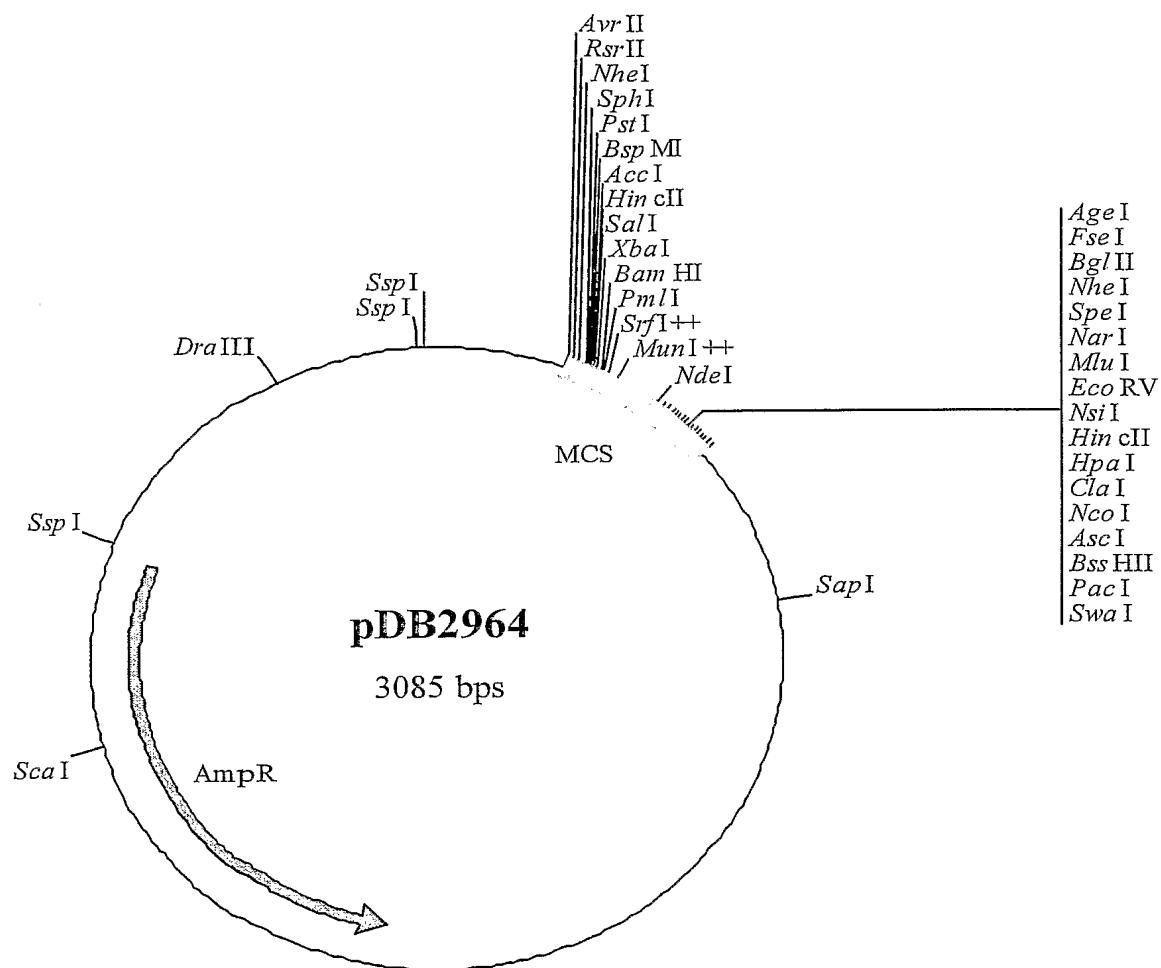
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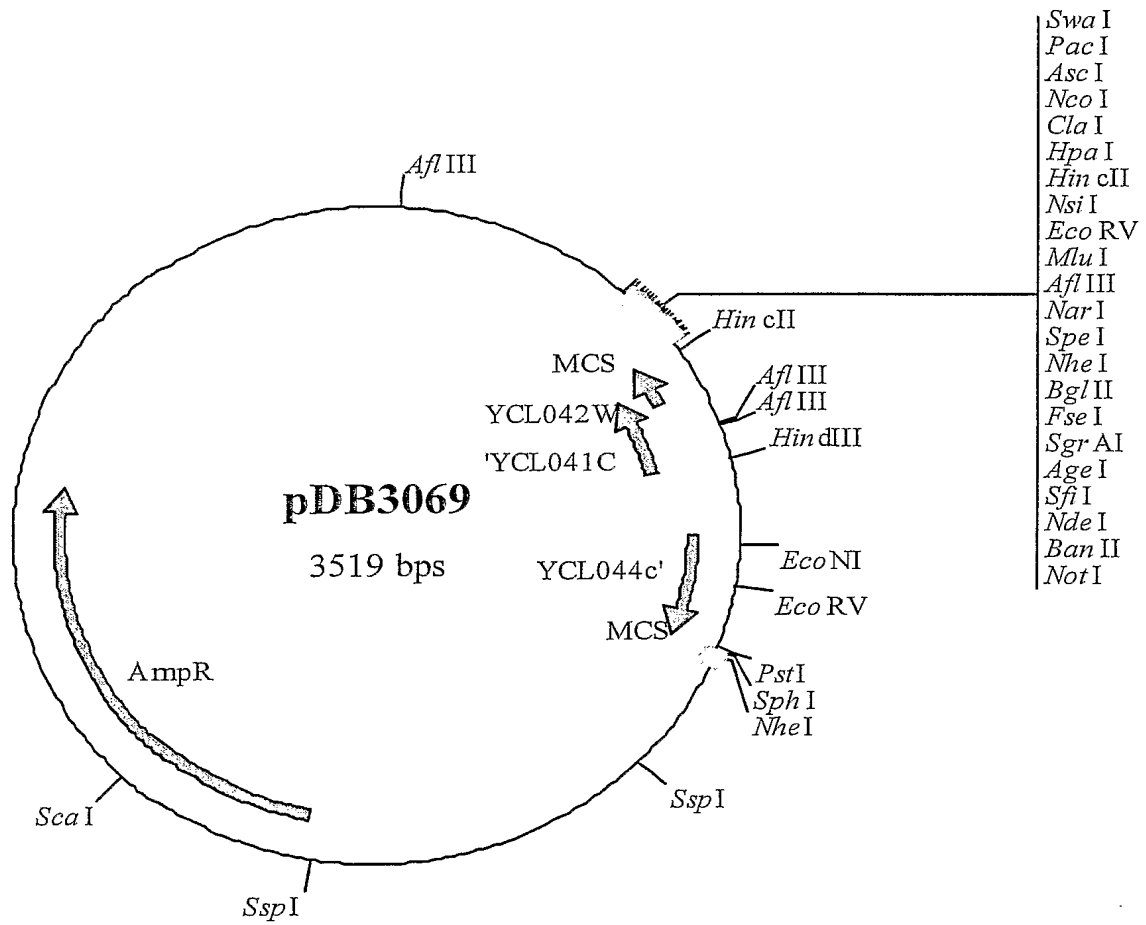
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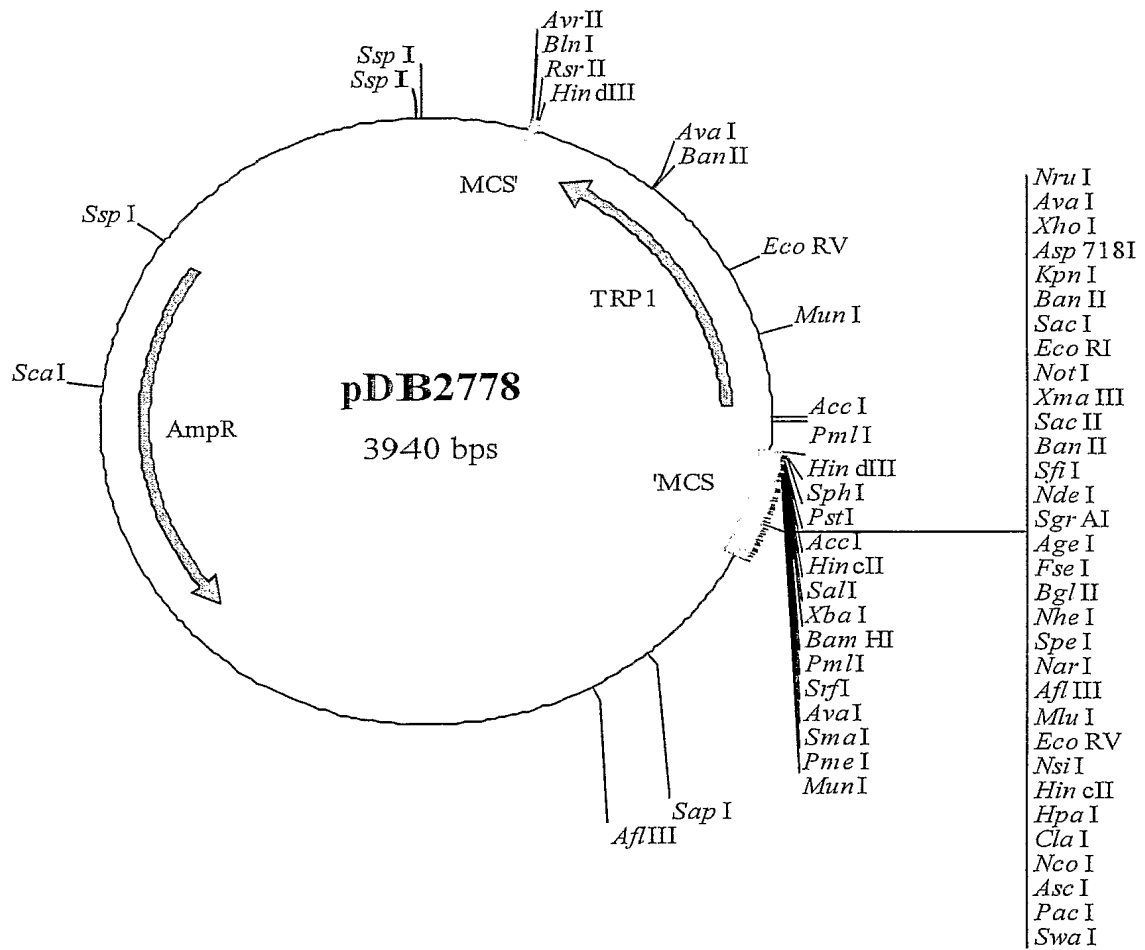
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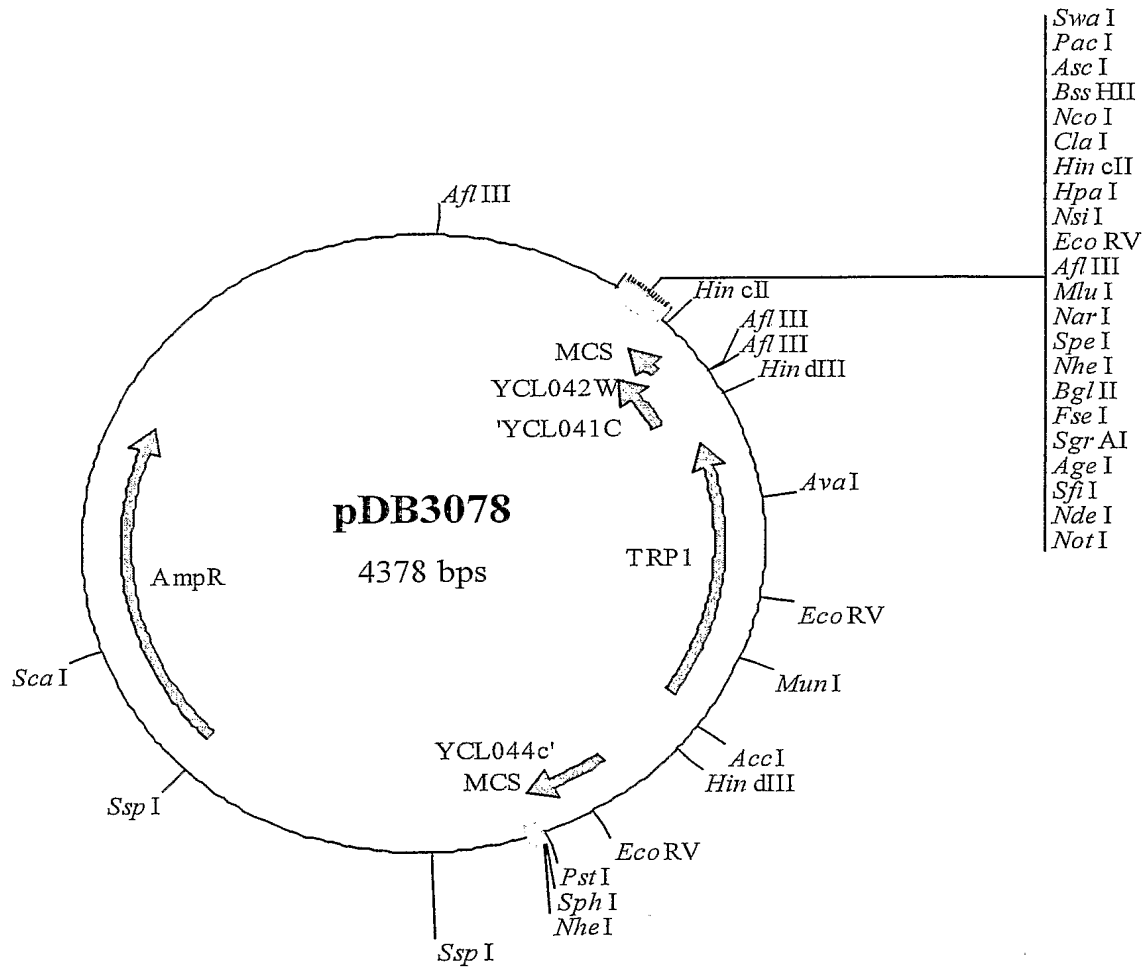
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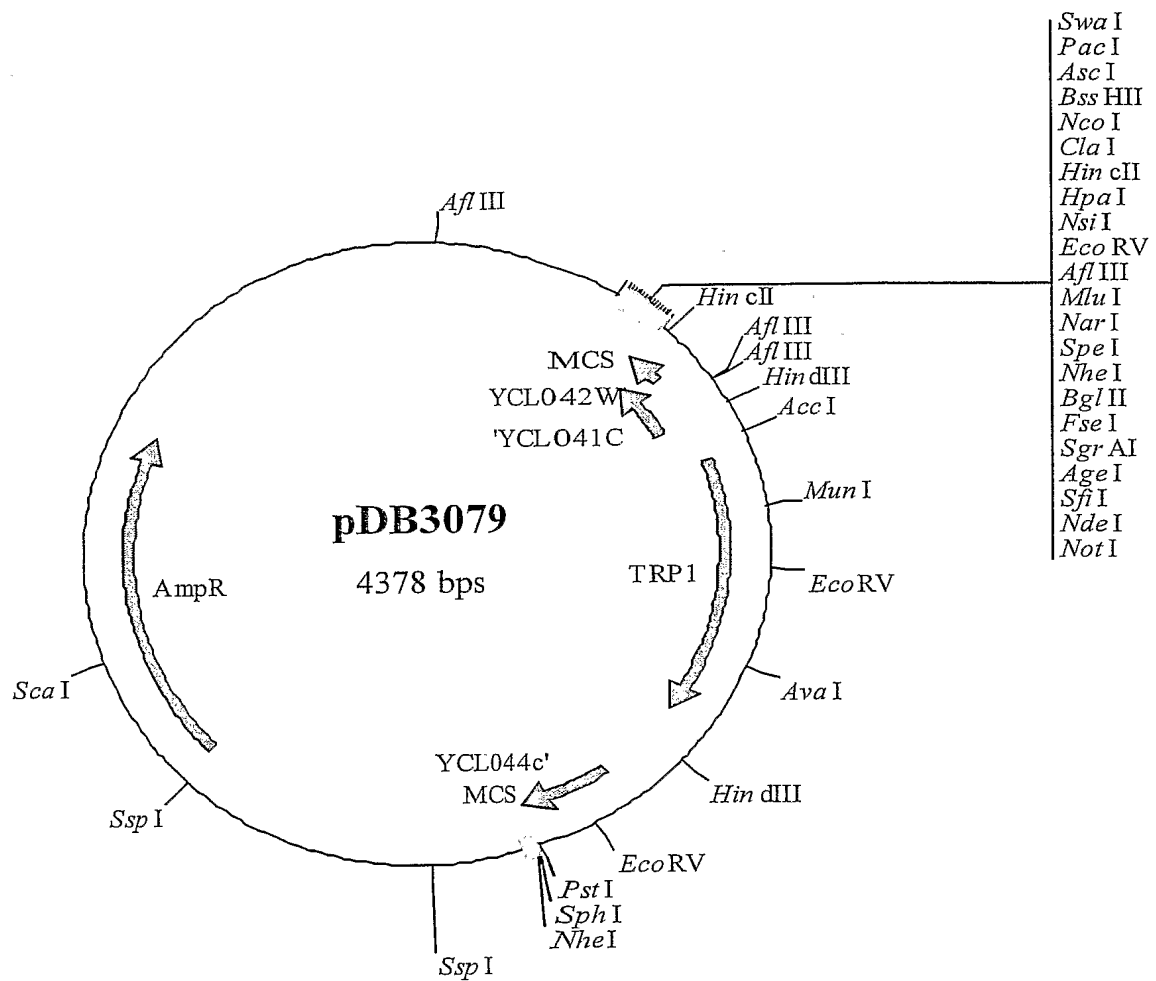
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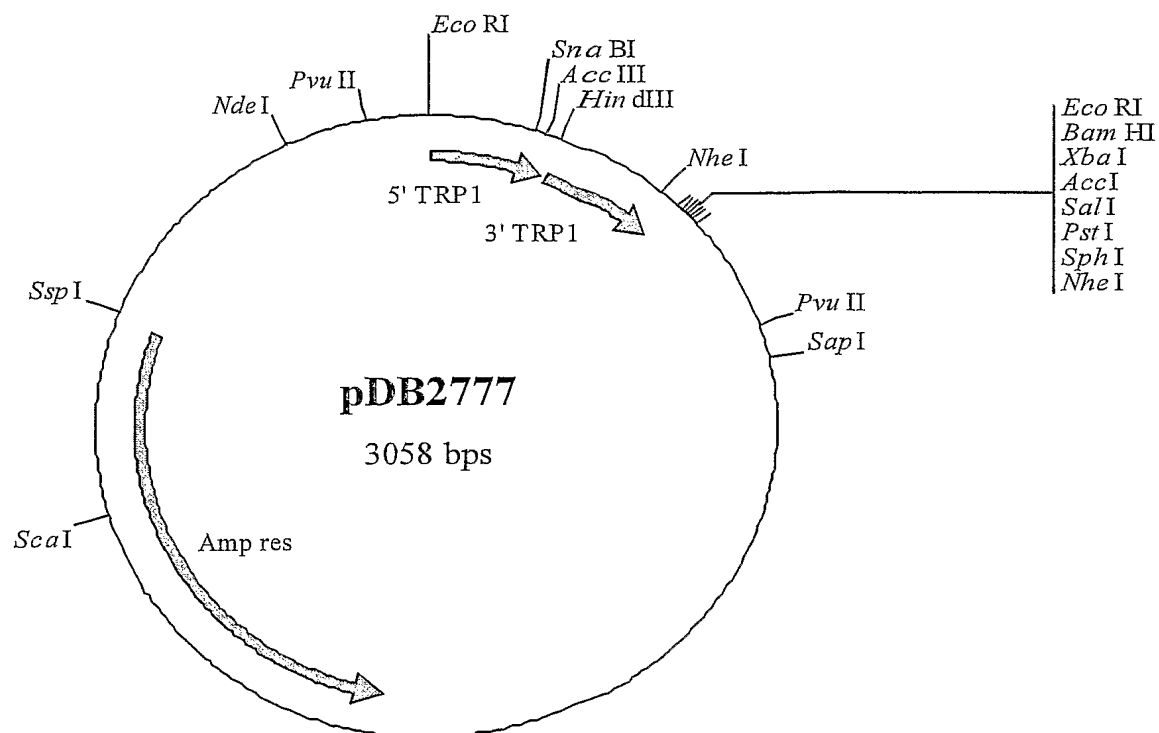
FIGURE 54

FIGURE 55

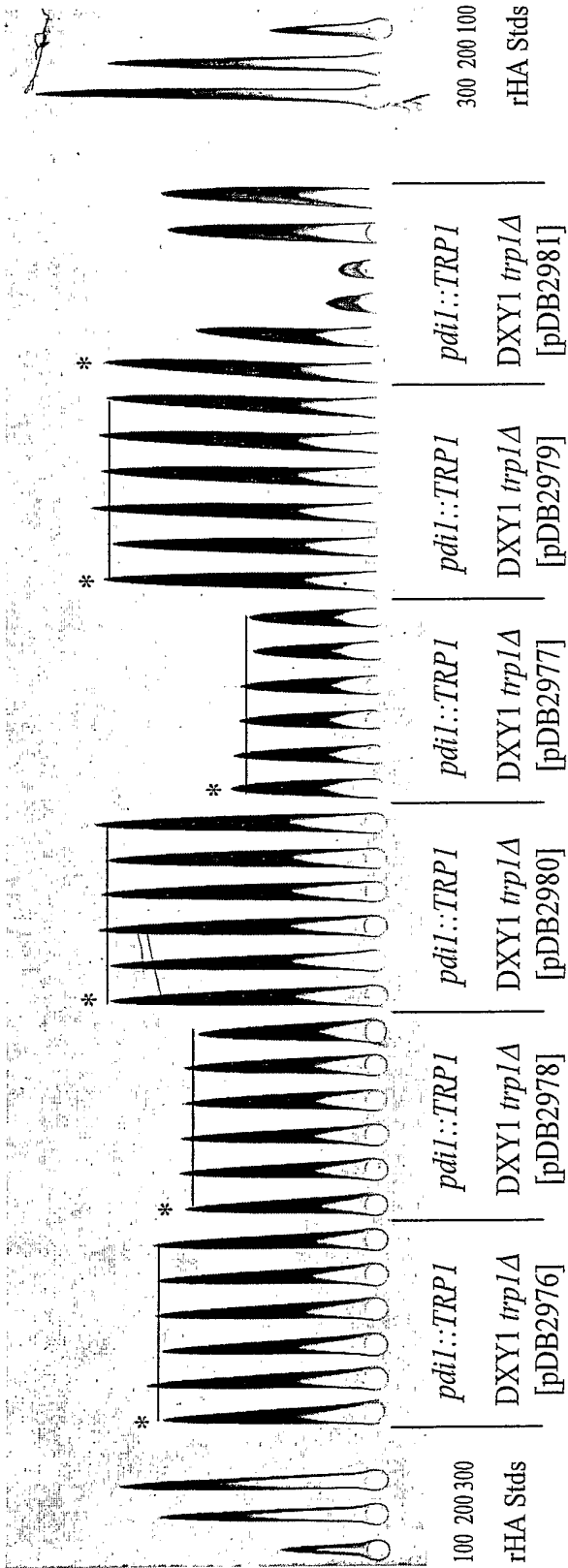


FIGURE 56

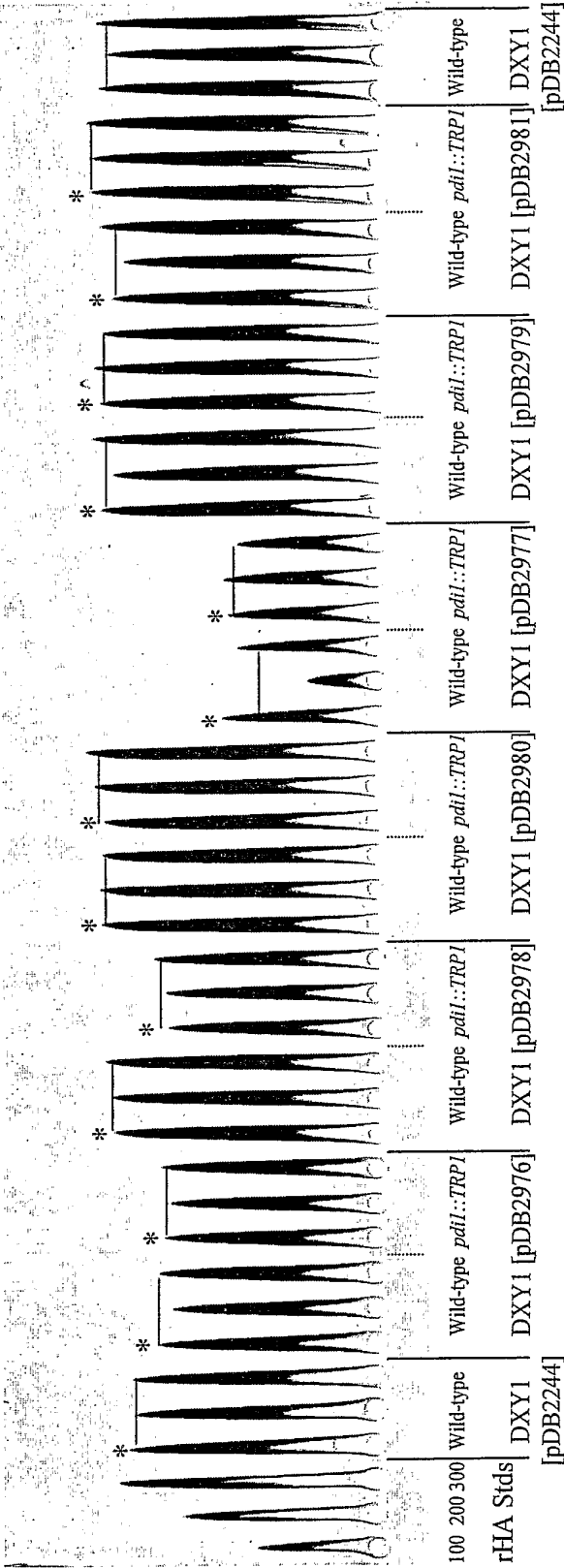


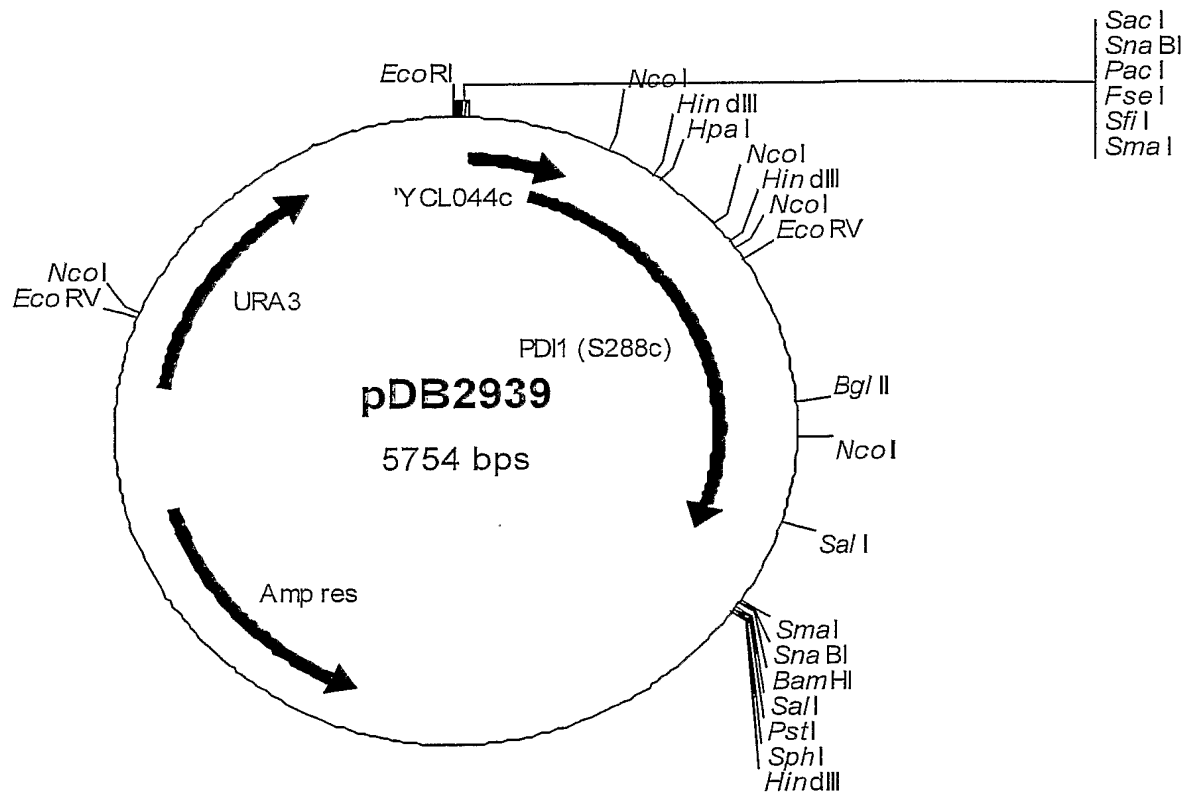
Figure 57

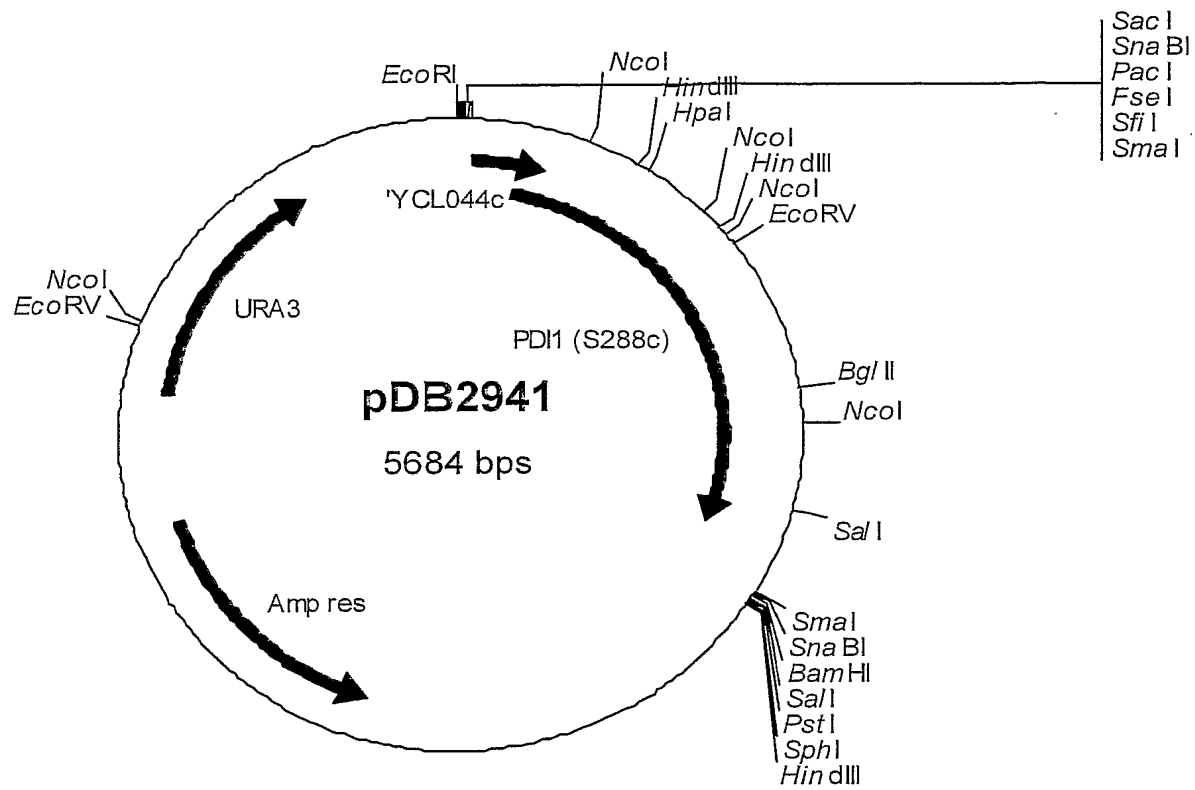
Figure 58

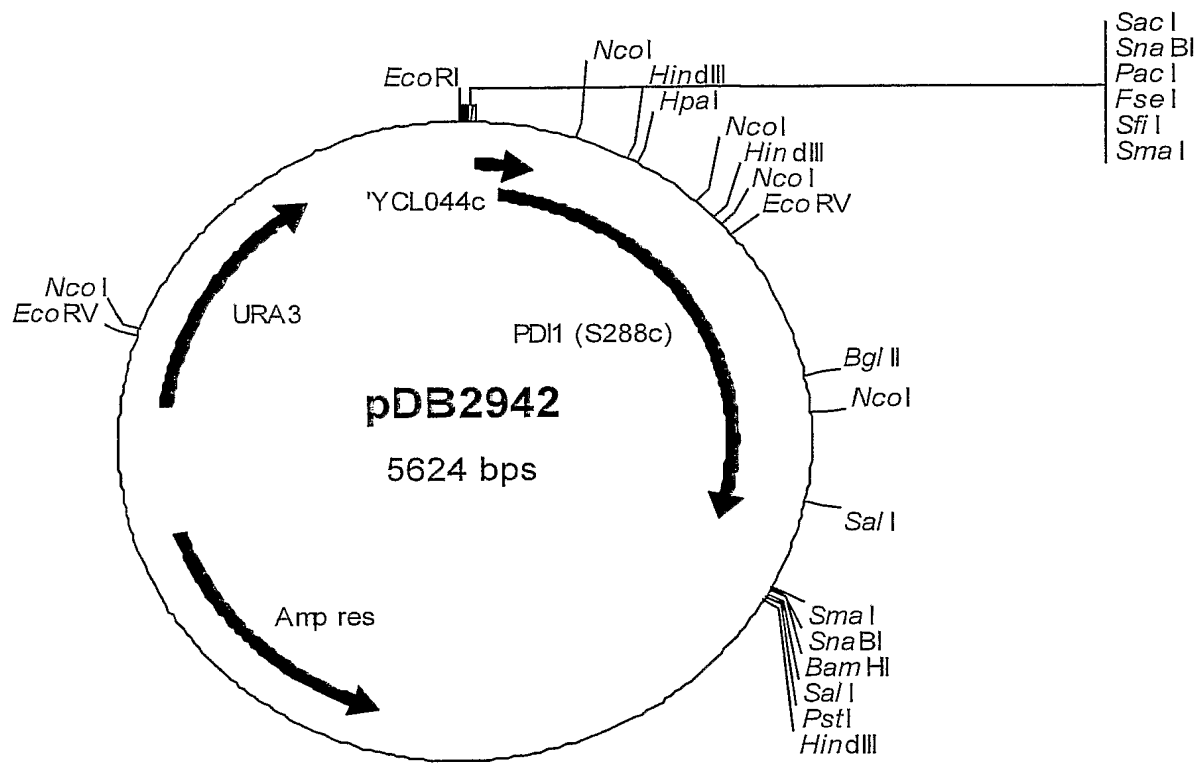
Figure 59

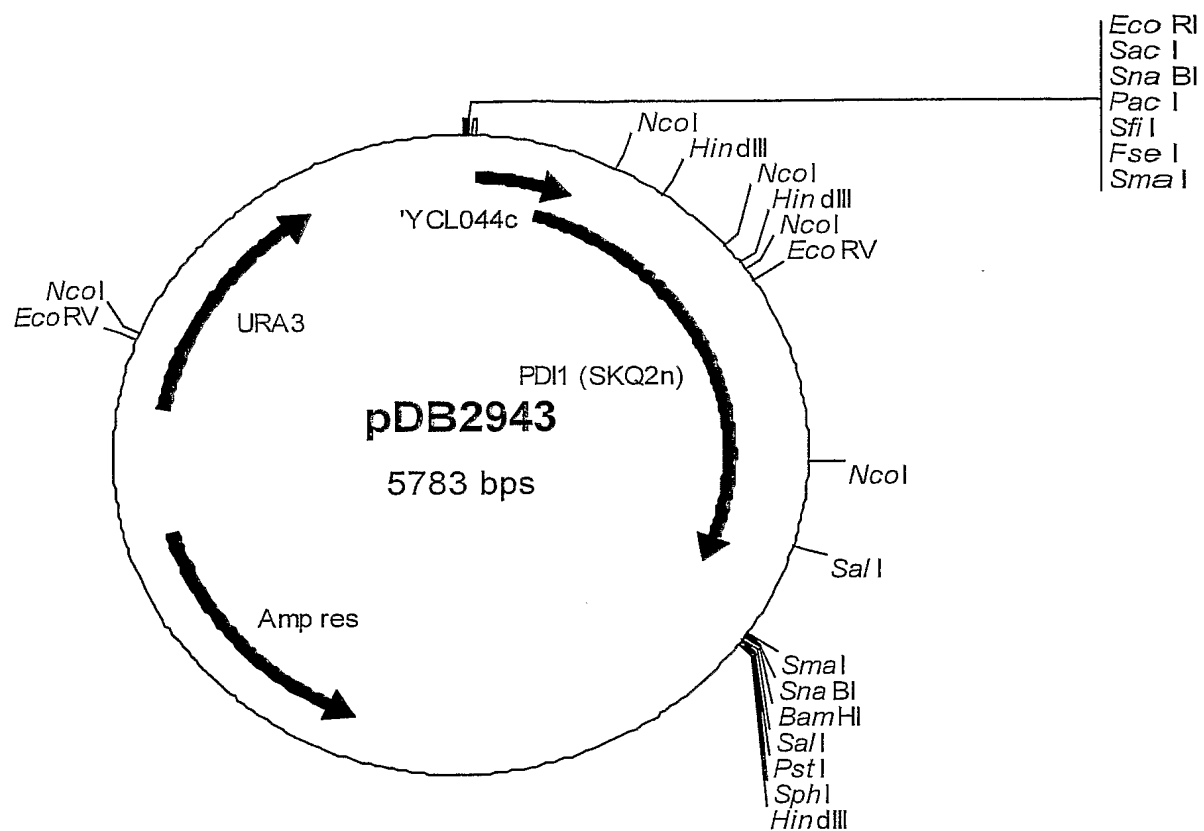
Figure 60

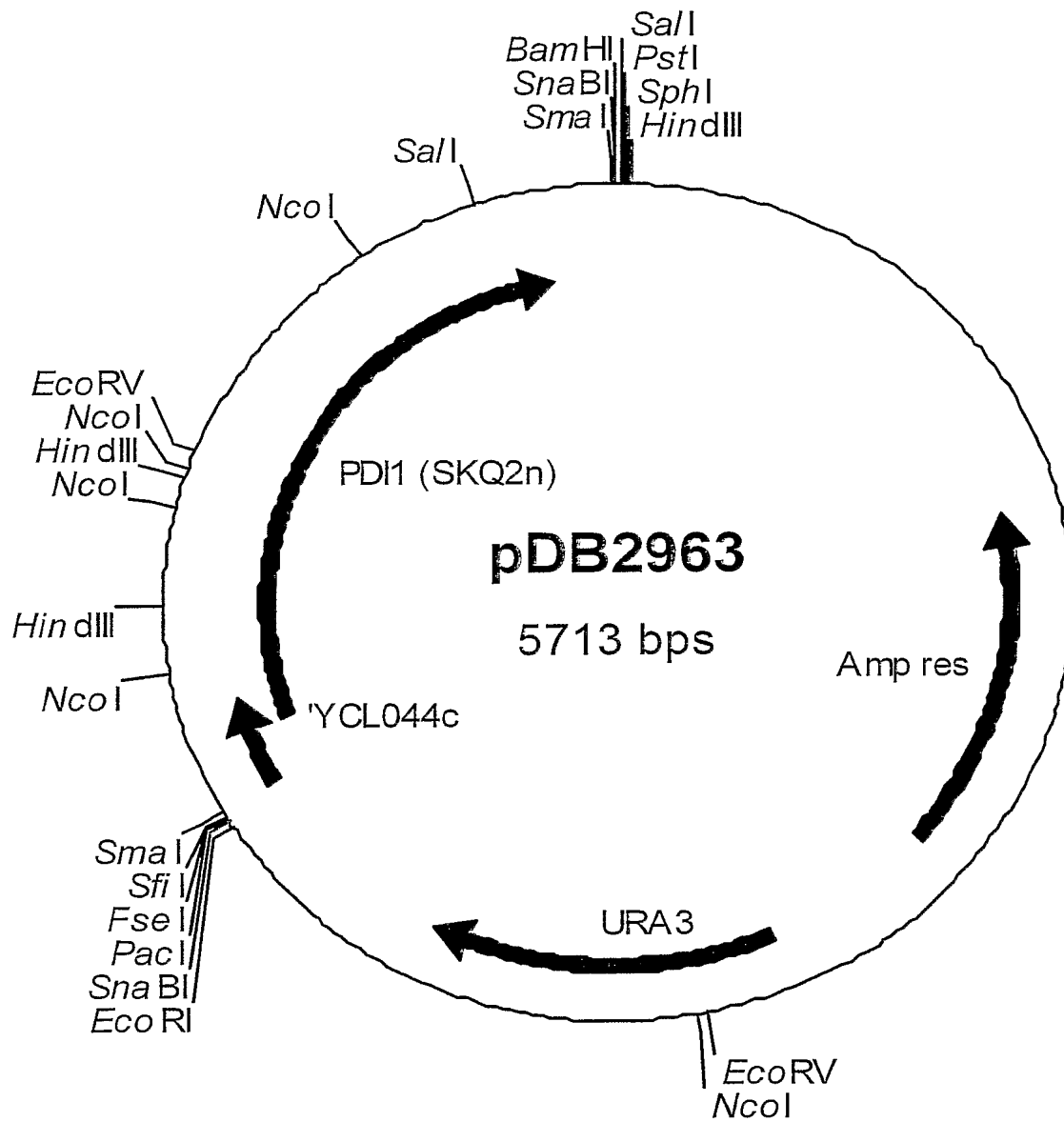
Figure 61

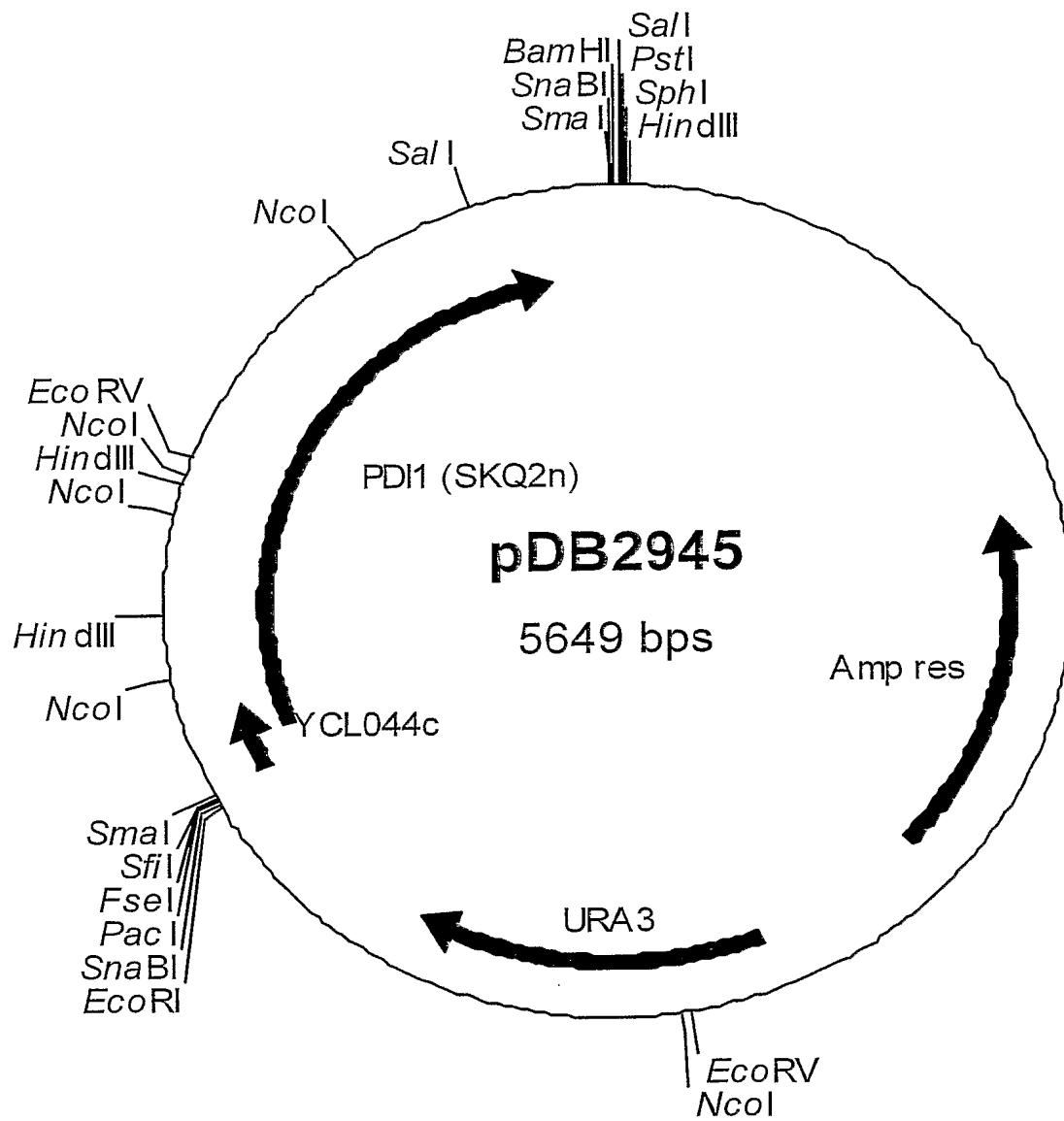
Figure 62

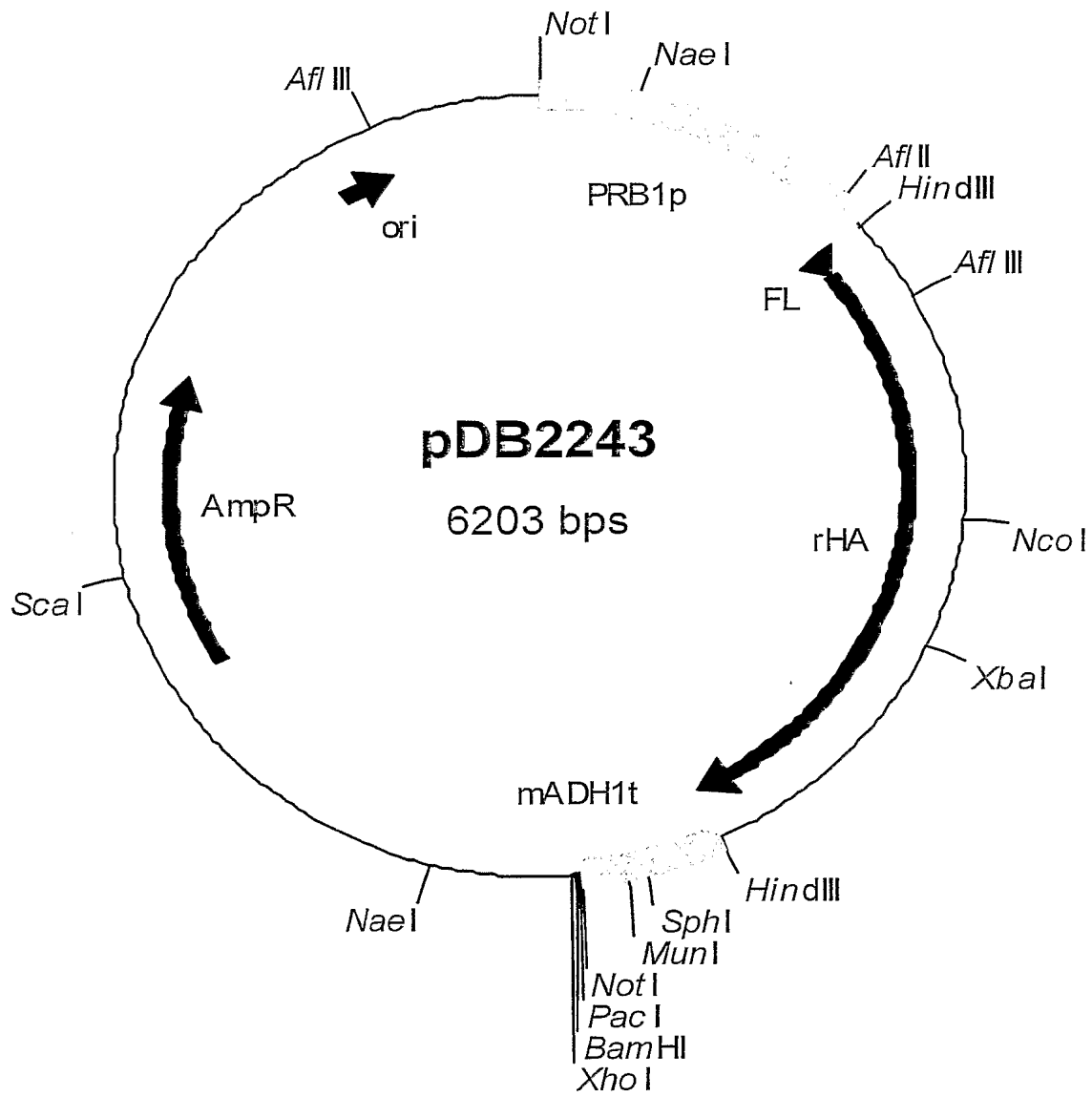
Figure 63

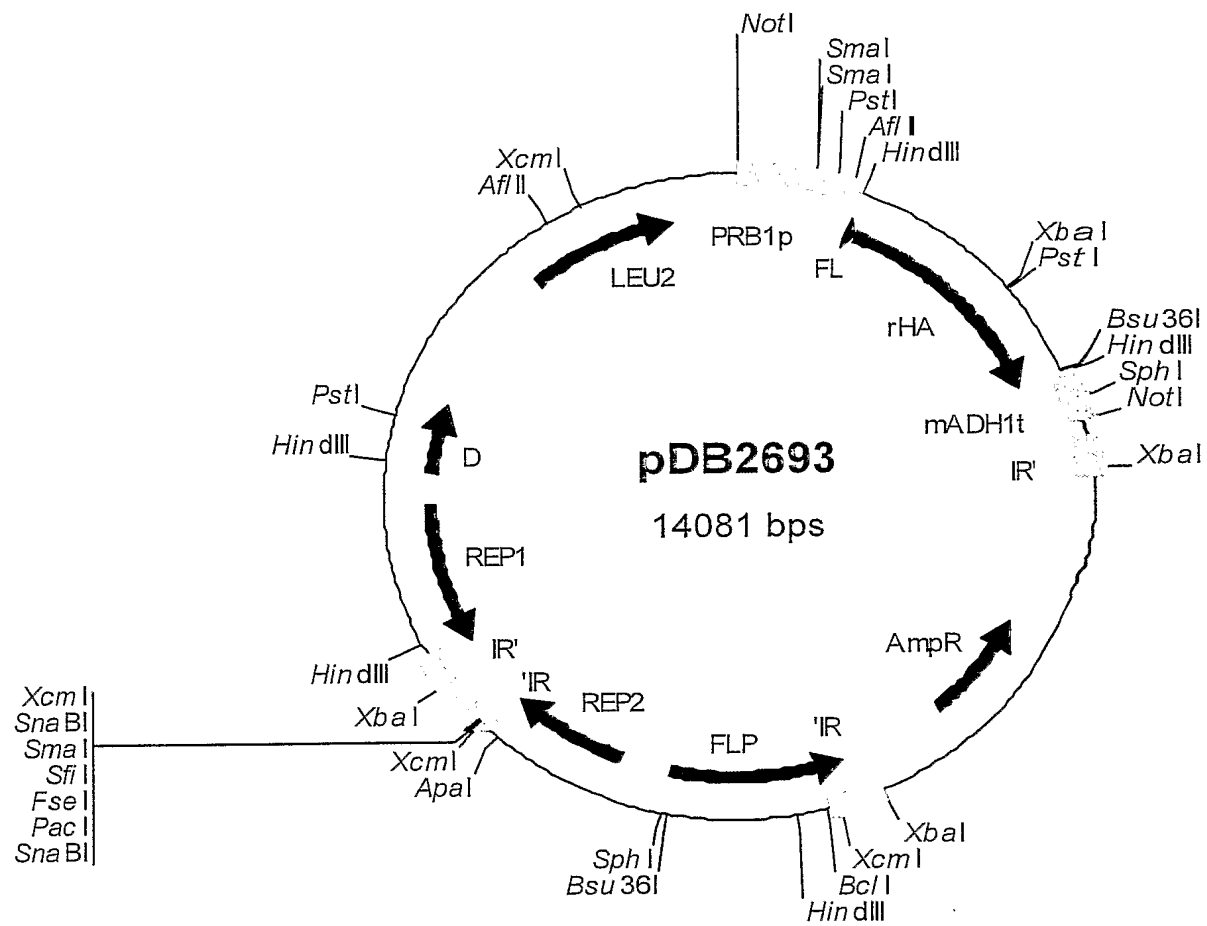
Figure 64

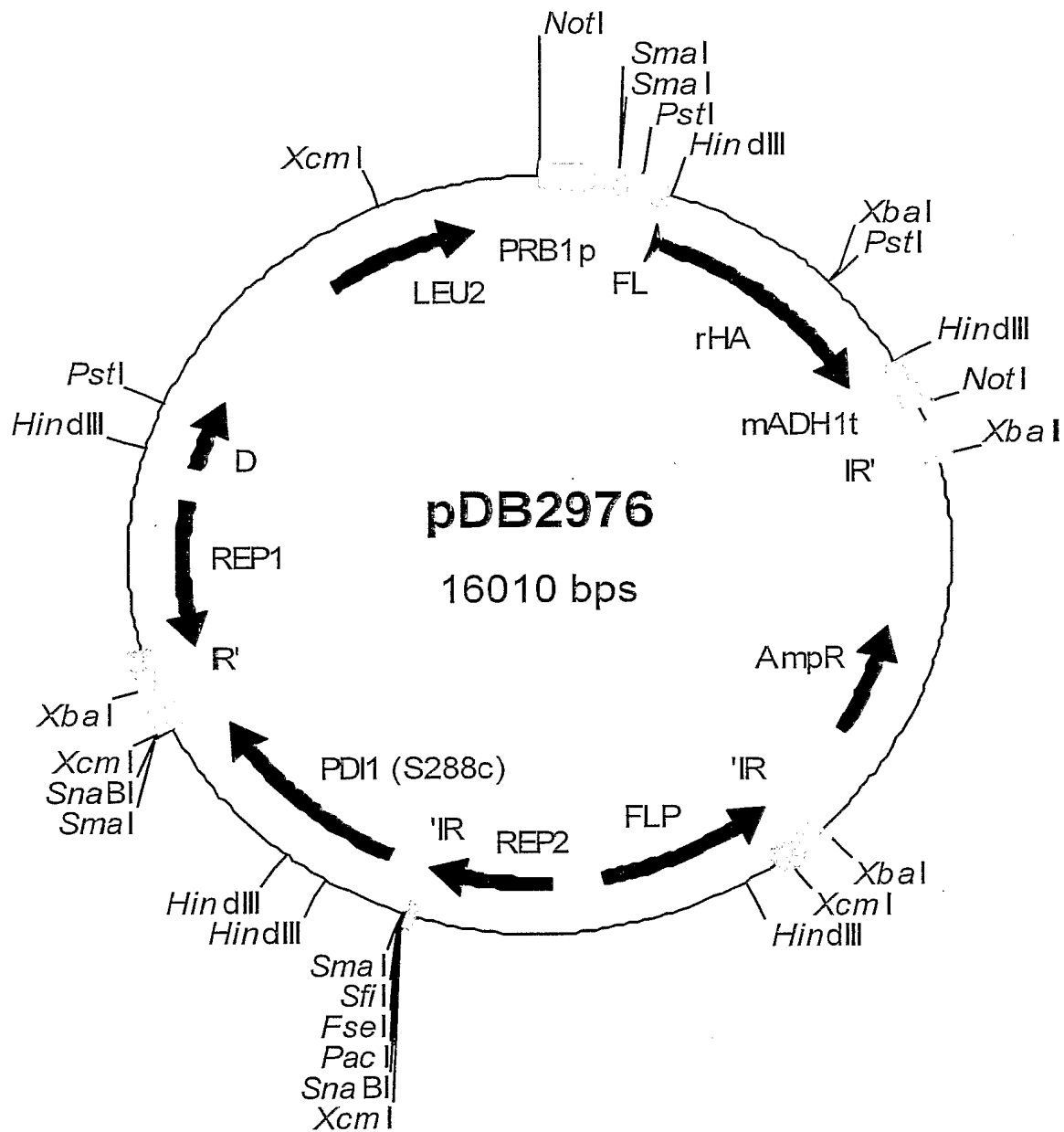
FIGURE 65

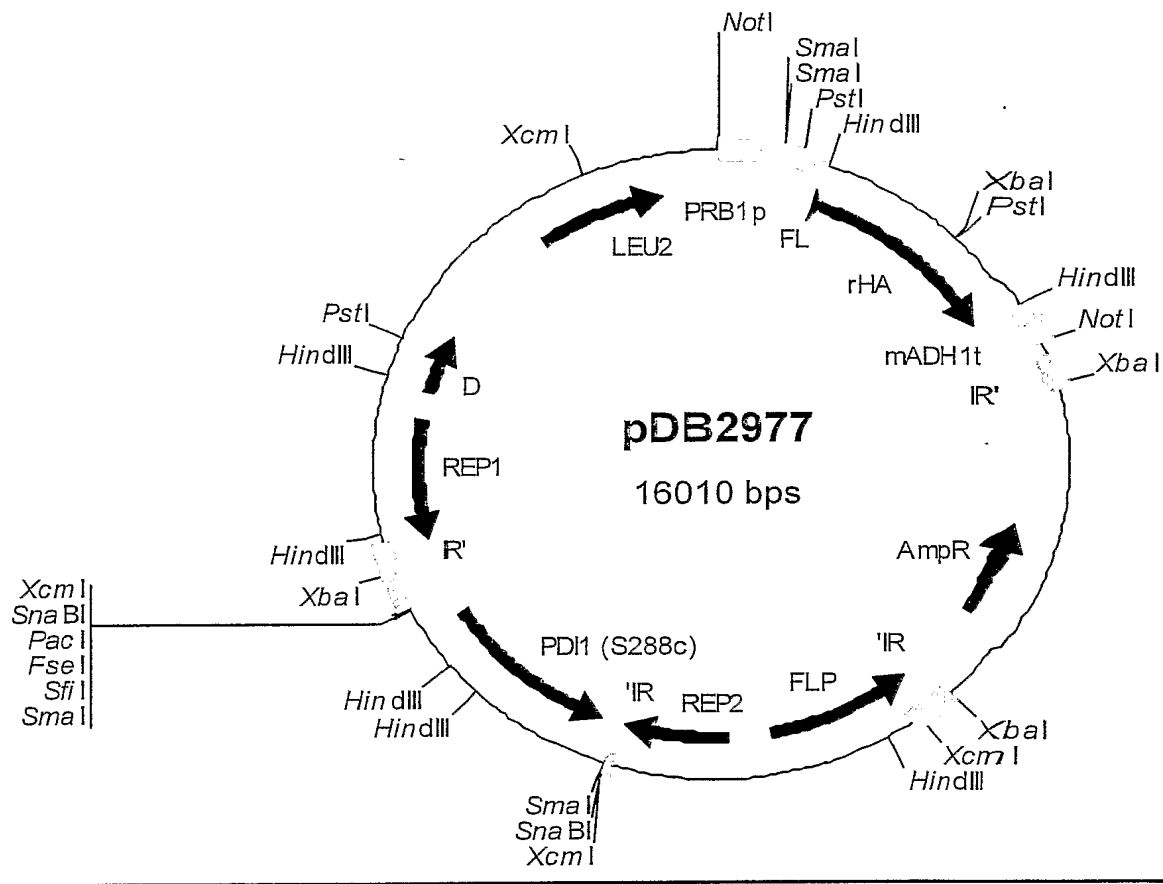
FIGURE 66

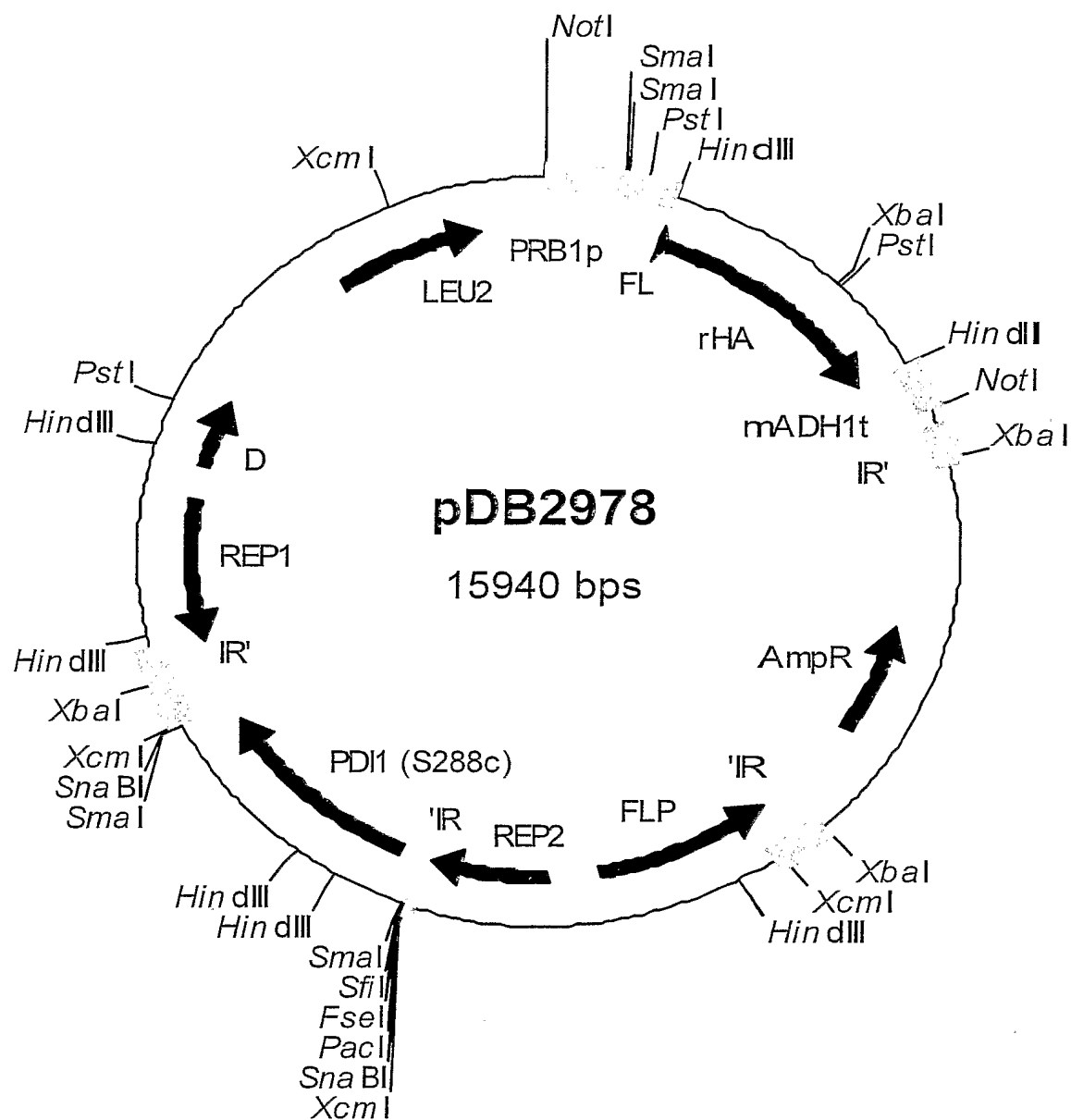
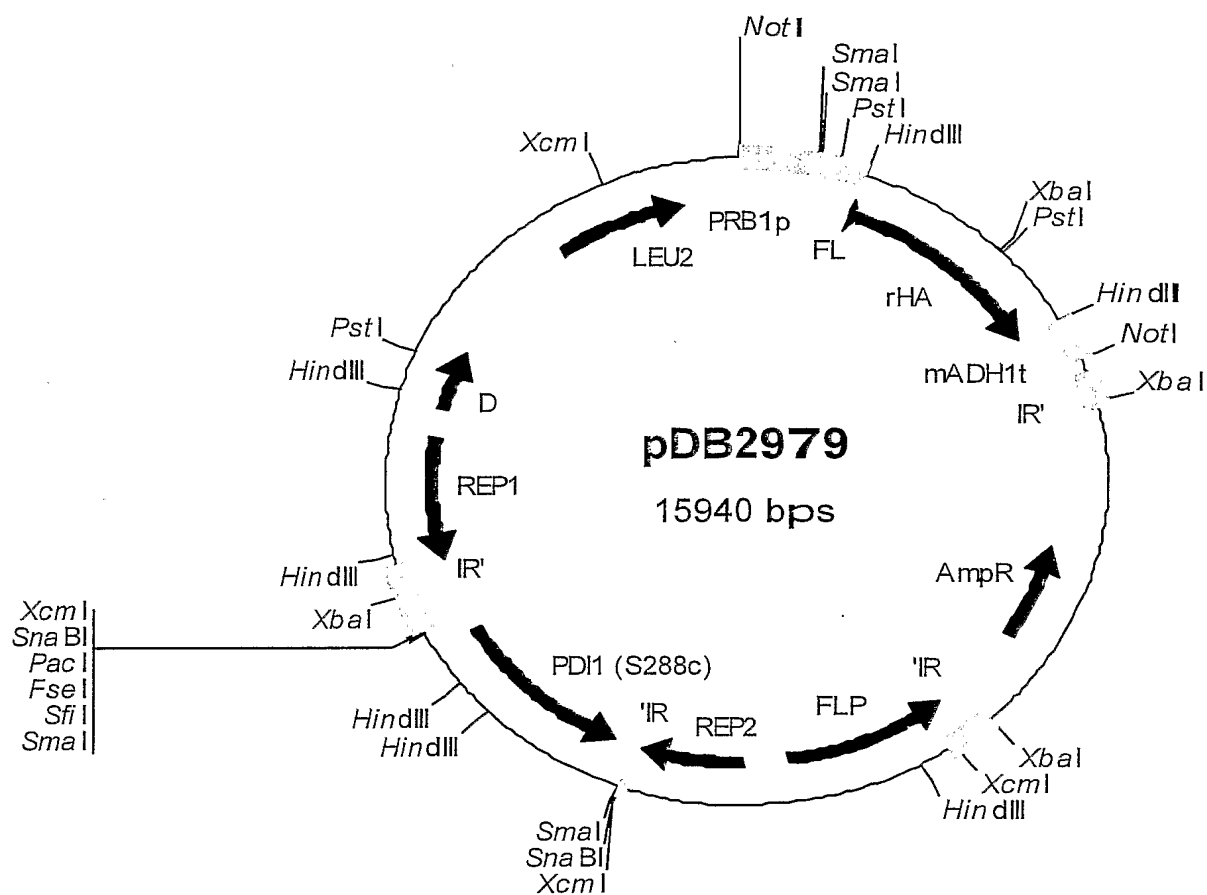
FIGURE 67

FIGURE 68

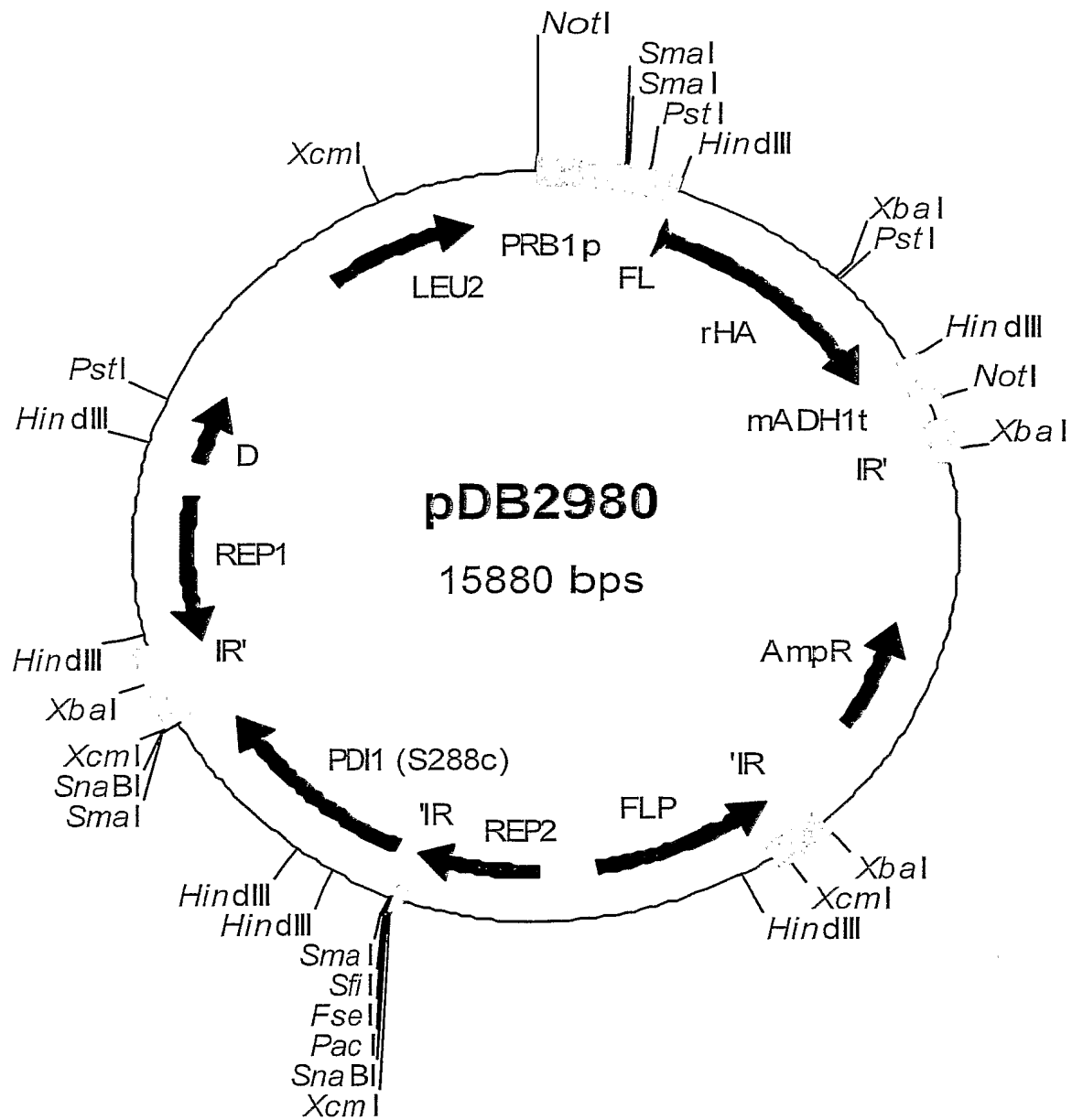


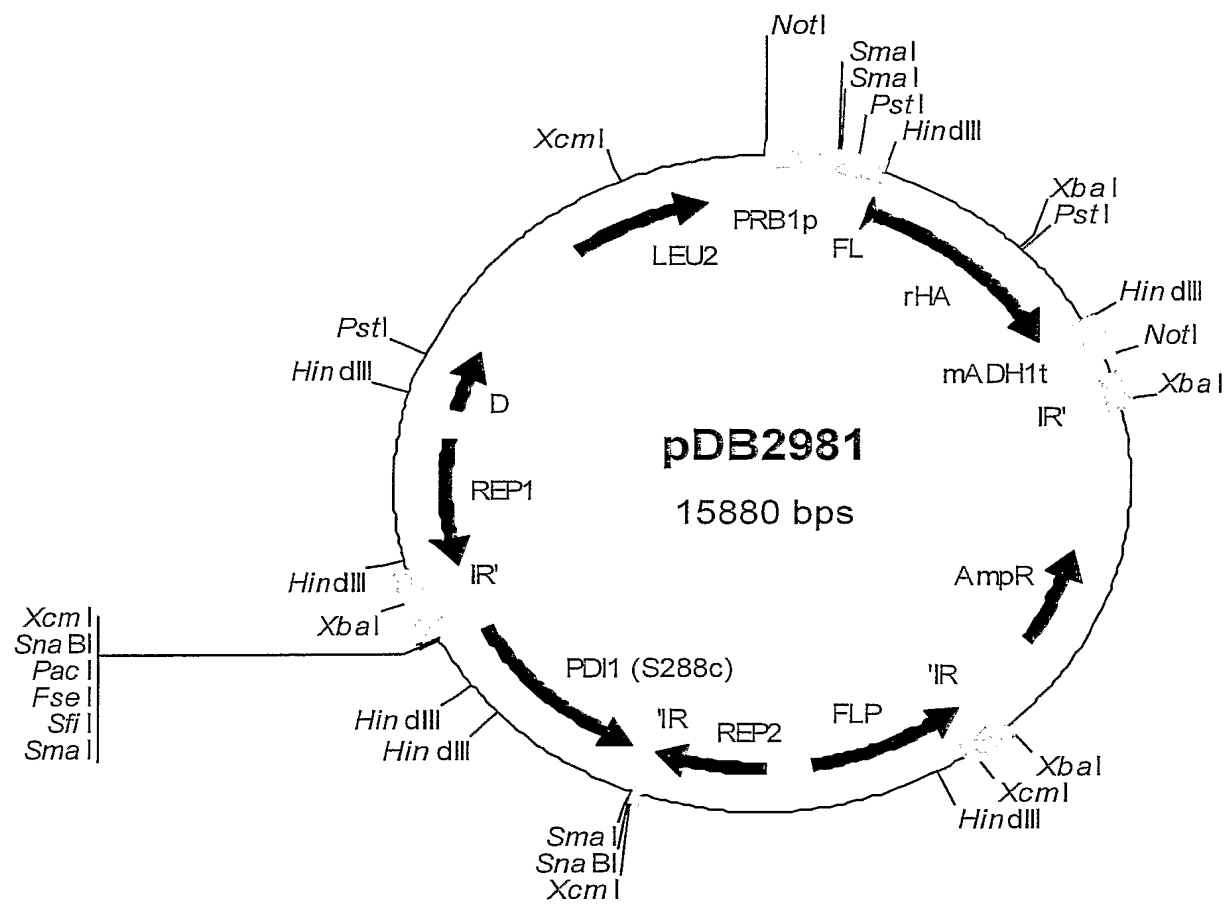
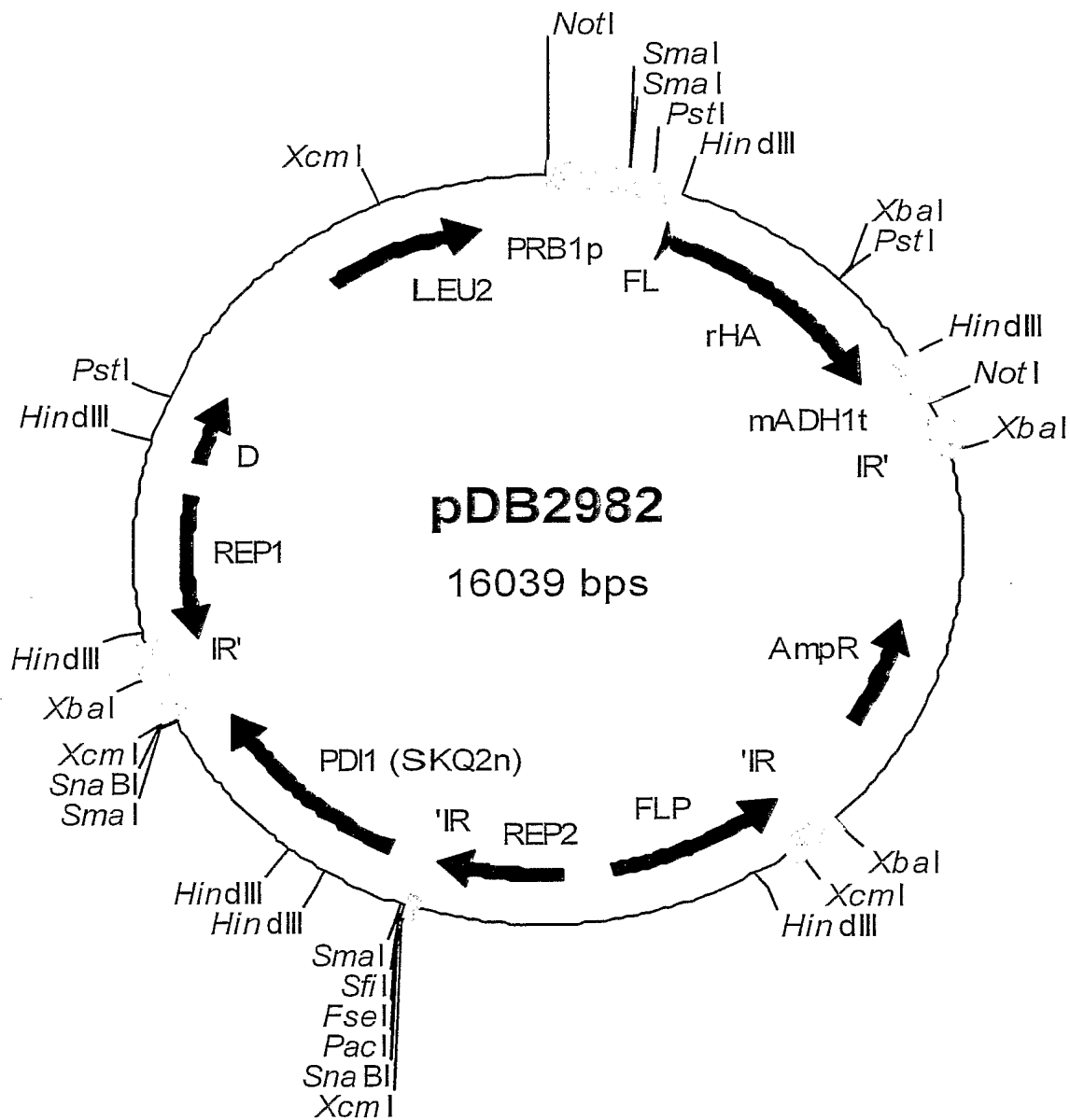
FIGURE 70

FIGURE 71

[illegible]

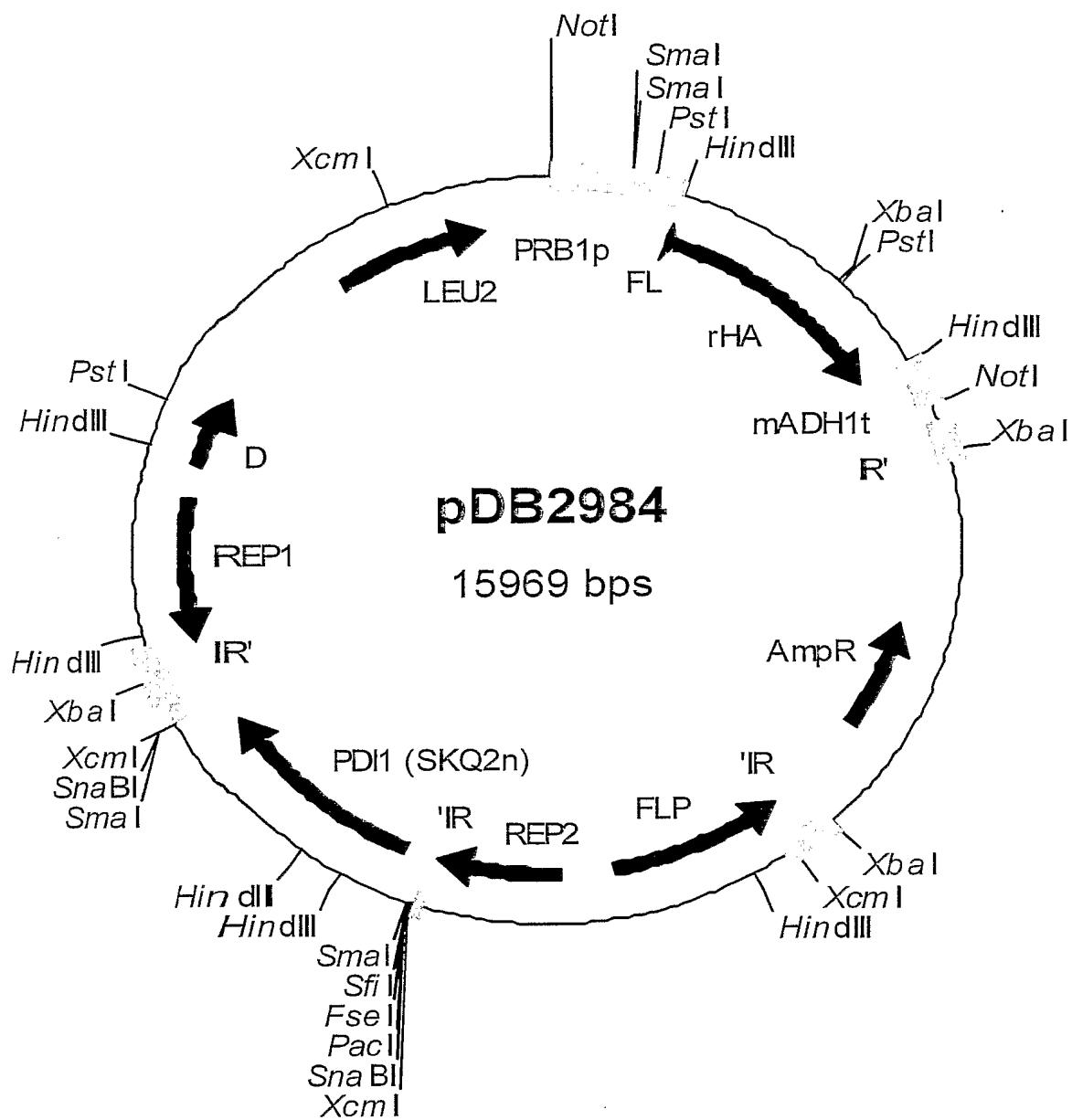
FIGURE 73

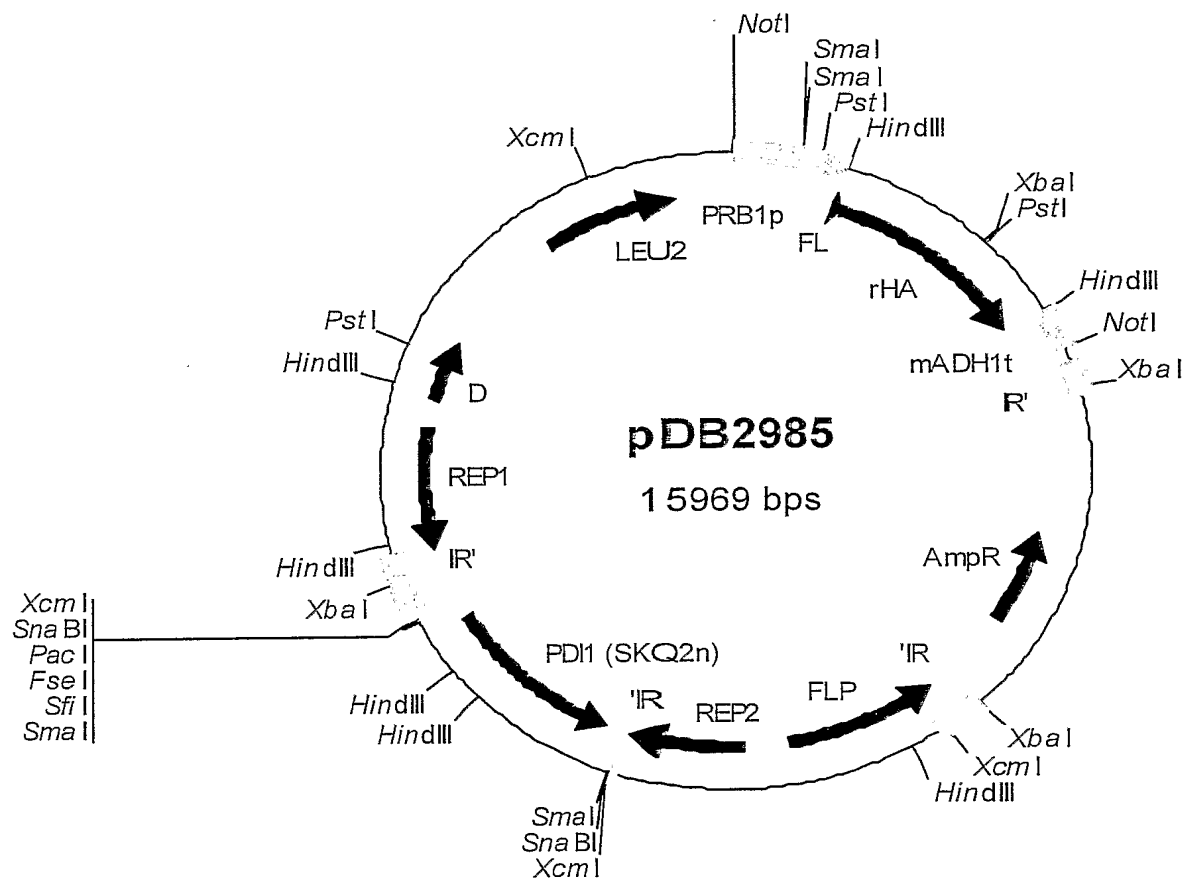
FIGURE 74

FIGURE 75

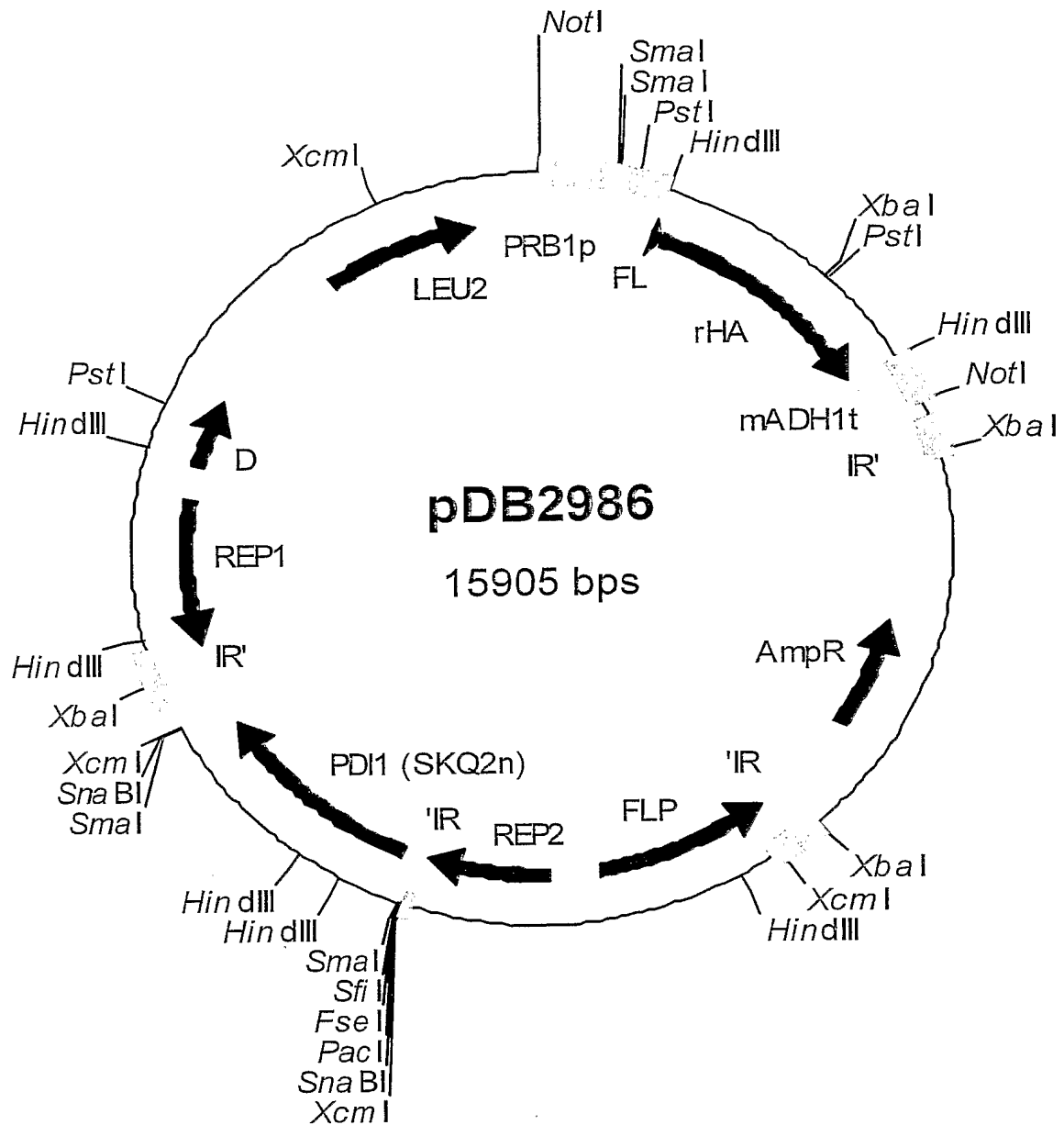


FIGURE 76